



Full wwPDB EM Validation Report ⓘ

Jun 22, 2023 – 12:25 PM JST

PDB ID : 7W4M
EMDB ID : EMD-32308
Title : Deactive state CI from Q1-NADH dataset, Subclass 4
Authors : Gu, J.; Yang, M.
Deposited on : 2021-11-28
Resolution : 3.30 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.dev50
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.33

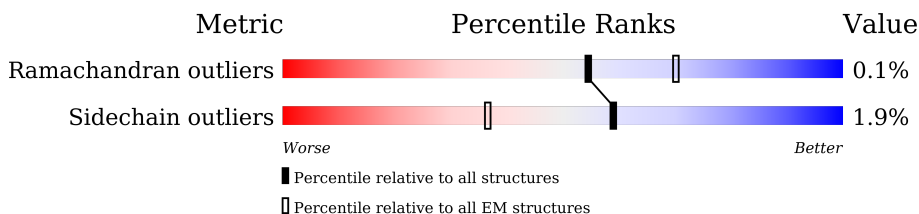
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.30 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



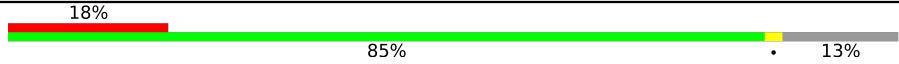
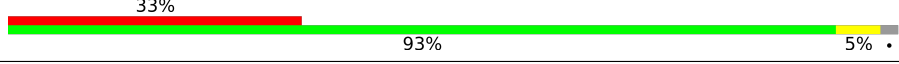
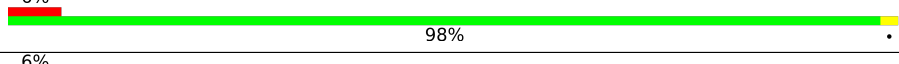
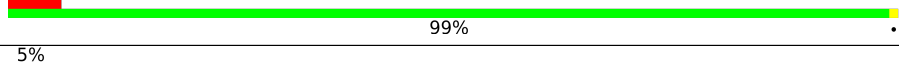
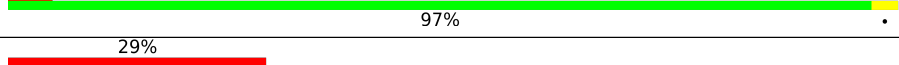
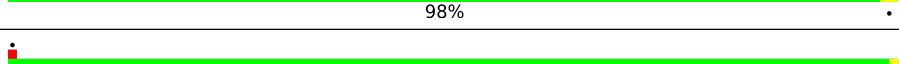
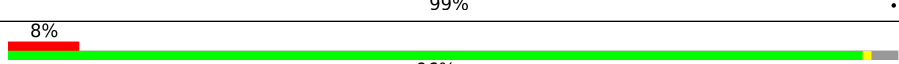
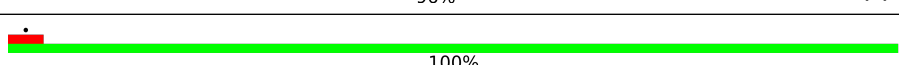
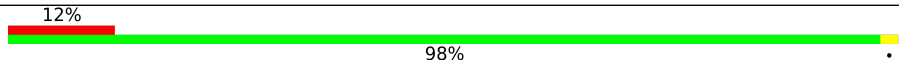
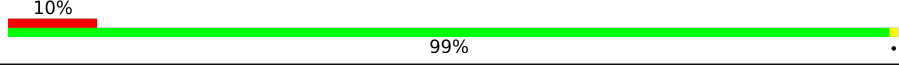
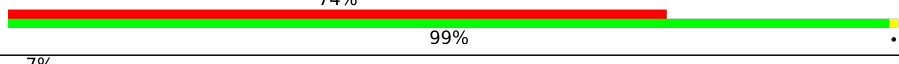
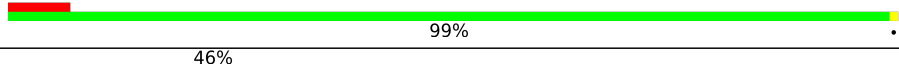
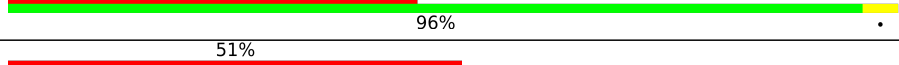
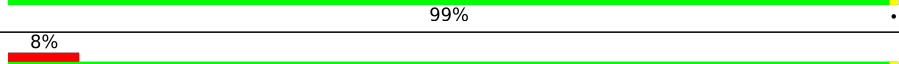
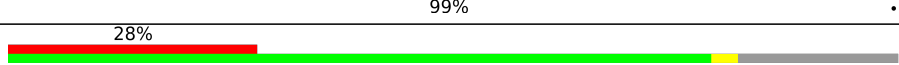
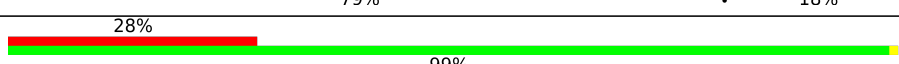
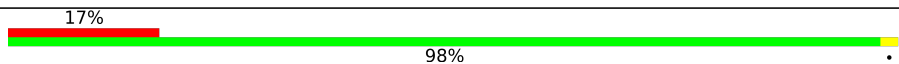
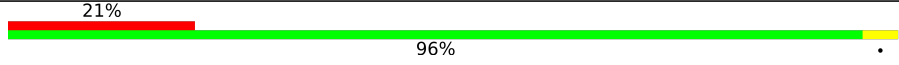

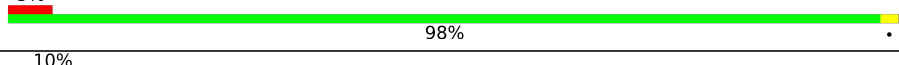
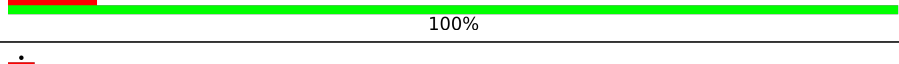
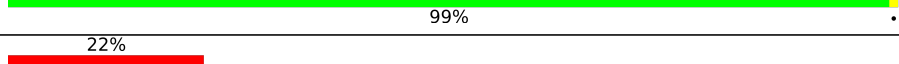
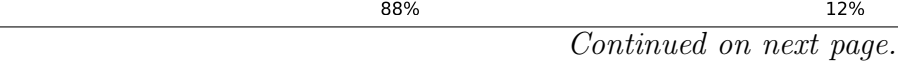


Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	433	 21% 99%
2	B	176	 99%
3	C	156	 97%
4	E	115	 17% 97%
5	F	86	 29% 97%
6	G	88	 70% 99%
6	X	88	 49% 97%
7	H	112	 21% 99%
8	I	112	 5% 86% 13%

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Mol	Chain	Length	Quality of chain
9	J	341	
10	K	43	
11	L	125	
12	M	690	
13	N	144	
14	O	217	
15	P	208	
16	Q	430	
17	S	70	
18	T	96	
19	U	83	
20	V	140	
21	W	142	
22	Y	70	
23	Z	84	
24	a	140	
25	b	126	
26	c	156	
27	d	175	
28	e	107	
29	f	49	
30	g	122	
31	h	105	
32	i	347	
33	j	113	

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Mol	Chain	Length	Quality of chain
34	k	98	
35	l	603	
36	m	175	
37	n	56	
38	o	128	
39	p	178	
40	r	459	
41	s	318	
42	u	171	
43	v	124	
44	w	320	

2 Entry composition

There are 57 unique types of molecules in this entry. The entry contains 66210 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	431	3314	2092	590	612	20	0	0

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	156	1244	792	227	211	14	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	E	115	968	618	179	166	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	F	86	683	431	127	123	2	0	0

- Molecule 6 is a protein called Acyl carrier protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	G	88	Total	C	N	O	S	0	0
			690	446	102	137	5		
6	X	88	Total	C	N	O	S	0	0
			693	448	103	137	5		

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	J	297	Total	C	N	O	S	0	0
			2339	1503	417	411	8		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
10	K	42	Total	C	N	O	0	0
			344	214	67	63		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L	125	Total	C	N	O	S	0	0
			1002	634	180	185	3		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	N	144	1193	761	217	211	4	0	0

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	Q	419	3366	2156	577	609	24	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	S	70	563	362	104	92	5	0	0

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	V	140	1017	648	174	189	6	0	0

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	Y	70	597	392	98	106	1	0	0

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	b	103	875	571	158	145	1	0	0

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	d	175	1445	908	259	270	8	0	0

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

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

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

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
29	f	42	338	223	57	58	0	0

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
33	j	99	793	539	118	131	5	0	0

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	l	603	4764	3159	737	817	51	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	m	129	948	636	138	166	8	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	n	56	460	301	81	77	1	0	0

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	s	303	2387	1602	369	395	21	0	0

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

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

- Molecule 43 is a protein called Complex I-B18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	v	124	1022	639	192	182	9	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	w	320	2562	1629	435	488	10	0	0

- Molecule 45 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe₄S₄) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 46 is FLAVIN MONONUCLEOTIDE (three-letter code: FMN) (formula: C₁₇H₂₁N₄O₉P) (labeled as "Ligand of Interest" by depositor).



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

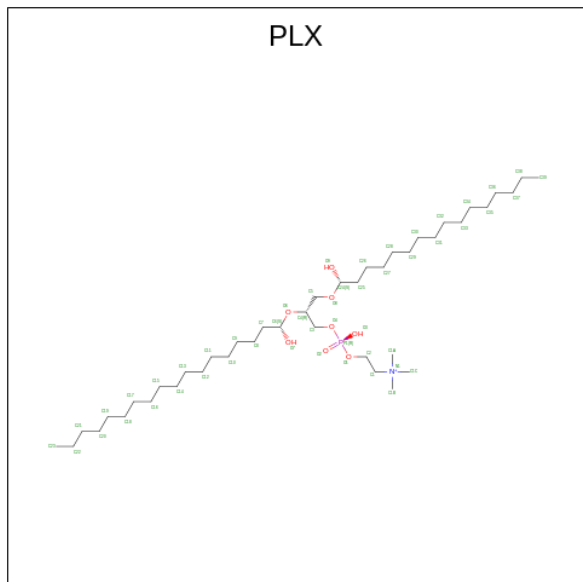
- Molecule 47 is 1,4-DIHYDRONICOTINAMIDE ADENINE DINUCLEOTIDE (three-letter code: NAI) (formula: C₂₁H₂₉N₇O₁₄P₂) (labeled as "Ligand of Interest" by depositor).



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

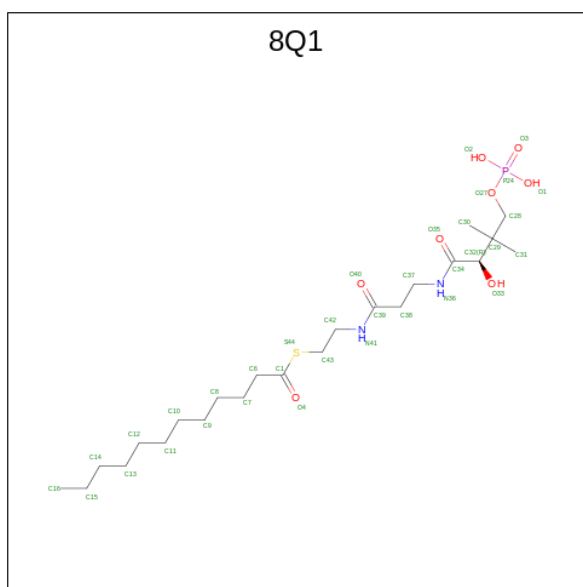
- Molecule 48 is (9R,11S)-9-({[(1S)-1-HYDROXYHEXADECYL]OXY}METHYL)-2,2-DIMETHYL-5,7,10-TRIOXA-2LAMBDA 5 -AZA-6LAMBDA 5 -PHOSPHAOCTACOSA

NE-6,6,11-TRIOLEIN (three-letter code: PLX) (formula: $C_{42}H_{89}NO_8P$) (labeled as "Ligand of Interest" by depositor).



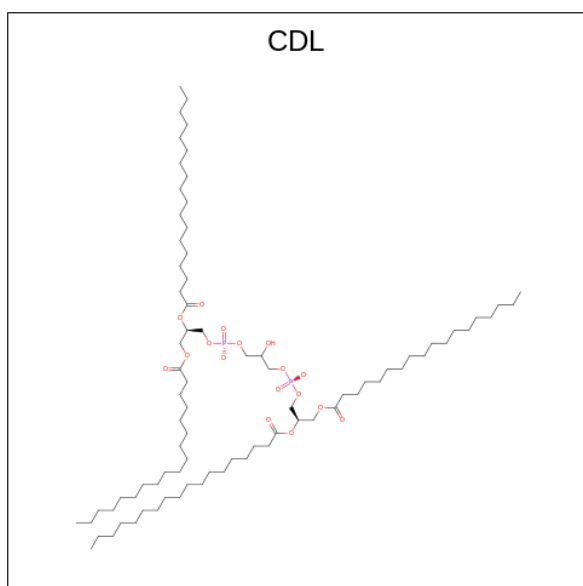
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
48	C	1	Total	C	N	O	P	0
			52	42	1	8	1	
48	a	1	Total	C	N	O	P	0
			52	42	1	8	1	
48	g	1	Total	C	N	O	P	0
			52	42	1	8	1	
48	j	1	Total	C	N	O	P	0
			52	42	1	8	1	
48	r	1	Total	C	N	O	P	0
			52	42	1	8	1	

- Molecule 49 is S-[2-({N-[(2R)-2-hydroxy-3,3-dimethyl-4-(phosphonoxy)butanoyl]-beta-alanyl}amino)ethyl] dodecanethioate (three-letter code: 8Q1) (formula: $C_{23}H_{45}N_2O_8PS$) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 50 is CARDIOLIPIN (three-letter code: CDL) (formula: $C_{81}H_{156}O_{17}P_2$) (labeled as "Ligand of Interest" by depositor).



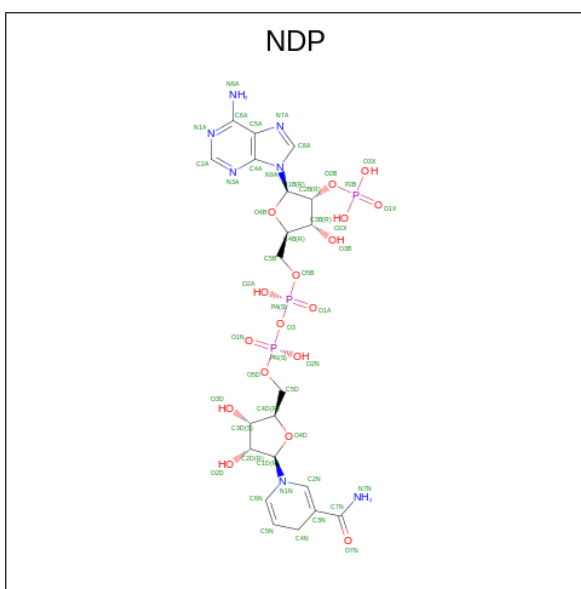
Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
50	I	1	51	32	17	2	0

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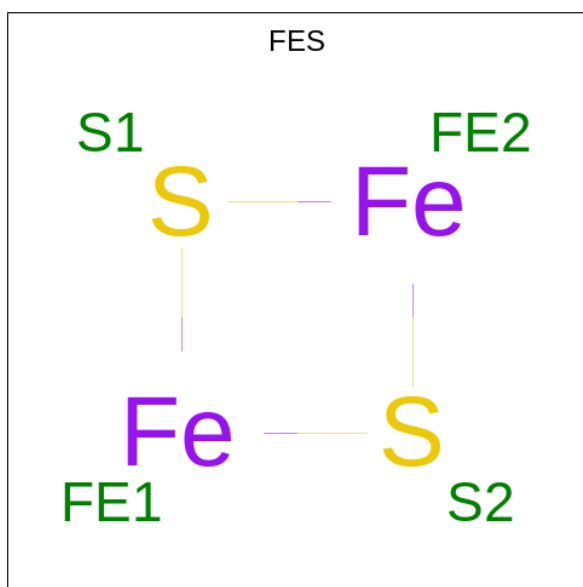
Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
50	a	1	Total 91	C 72	O 17	P 2	0
50	g	1	Total 100	C 81	O 17	P 2	0
50	i	1	Total 66	C 47	O 17	P 2	0

- Molecule 51 is NADPH DIHYDRO-NICOTINAMIDE-ADENINE-DINUCLEOTIDE PHOSPHATE (three-letter code: NDP) (formula: $C_{21}H_{30}N_7O_{17}P_3$) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 52 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe_2S_2) (labeled as "Ligand of Interest" by depositor).

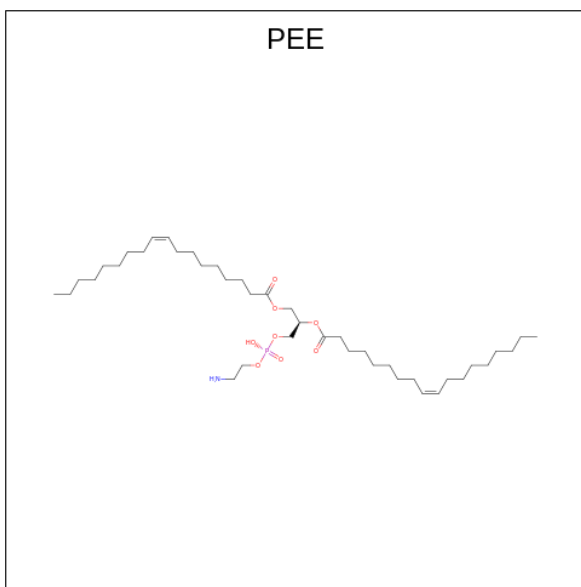


Mol	Chain	Residues	Atoms			AltConf
52	M	1	Total	Fe	S	0
			4	2	2	
52	O	1	Total	Fe	S	0
			4	2	2	

- Molecule 53 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

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

- Molecule 54 is 1,2-dioleoyl-sn-glycero-3-phosphoethanolamine (three-letter code: PEE) (formula: C₄₁H₇₈NO₈P) (labeled as "Ligand of Interest" by depositor).

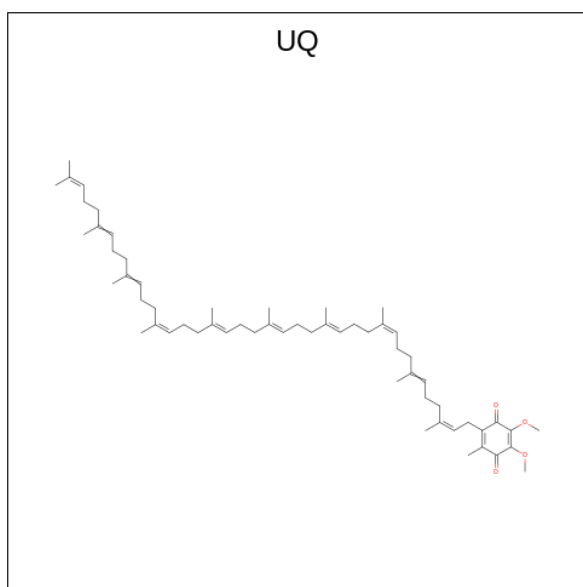


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
54	Q	1	51	41	1	8	1	0
54	U	1	51	41	1	8	1	0
54	b	1	46	36	1	8	1	0
54	i	1	47	37	1	8	1	0
54	j	1	47	37	1	8	1	0
54	l	1	46	36	1	8	1	0
54	m	1	41	31	1	8	1	0
54	r	1	51	41	1	8	1	0

- Molecule 55 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

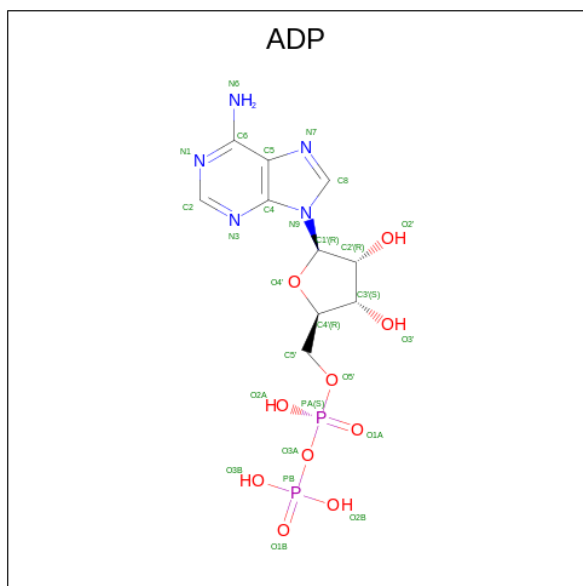
Mol	Chain	Residues	Atoms		AltConf
55	T	1	Total	Zn	0
			1	1	

- Molecule 56 is Coenzyme Q10, (2Z,6E,10Z,14E,18E,22E,26Z)-isomer (three-letter code: UQ) (formula: C₅₉H₉₀O₄) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 57 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).

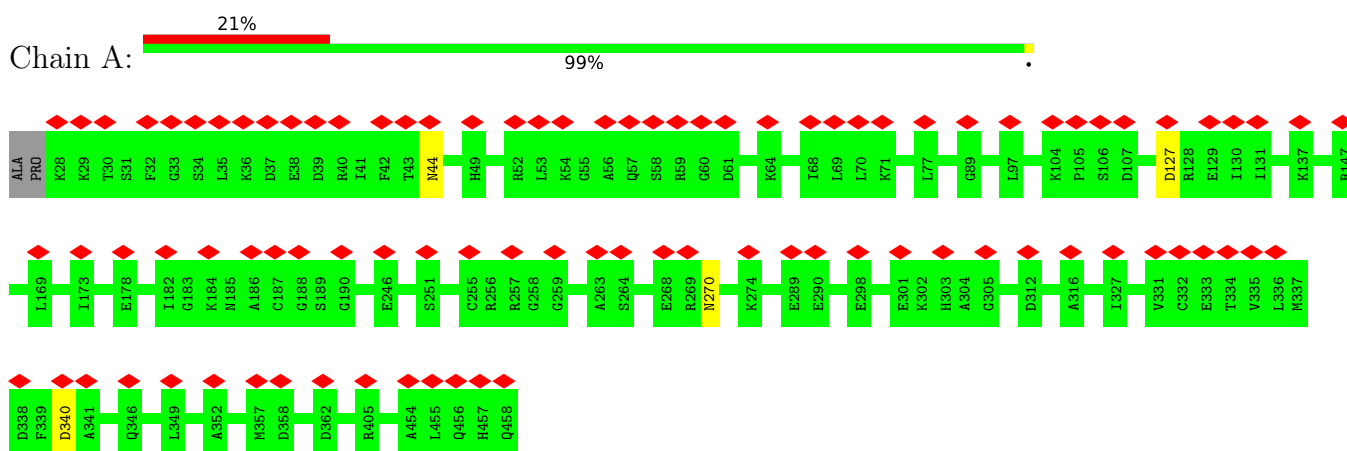


Mol	Chain	Residues	Atoms					AltConf
57	w	1	Total	C	N	O	P	0
			27	10	5	10	2	

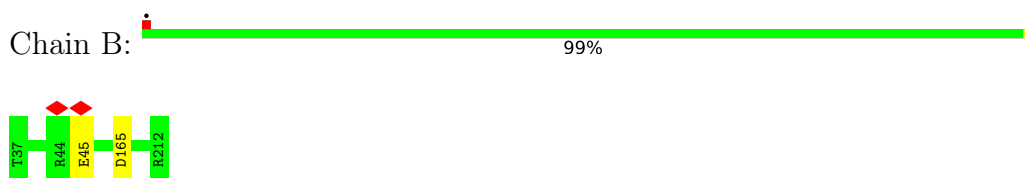
3 Residue-property plots [i](#)

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

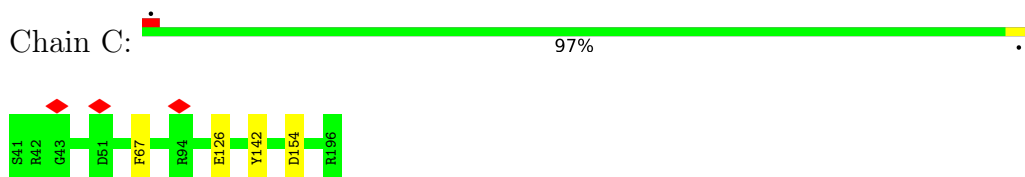
- Molecule 1: NADH dehydrogenase [ubiquinone] flavoprotein 1, mitochondrial



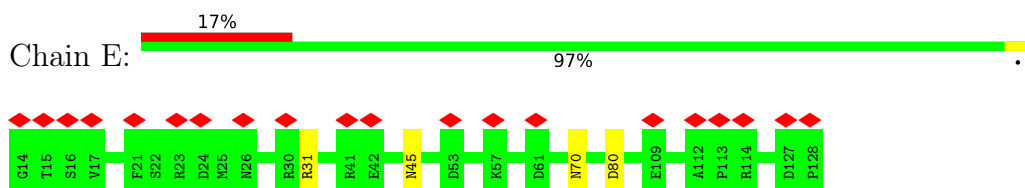
- Molecule 2: NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial



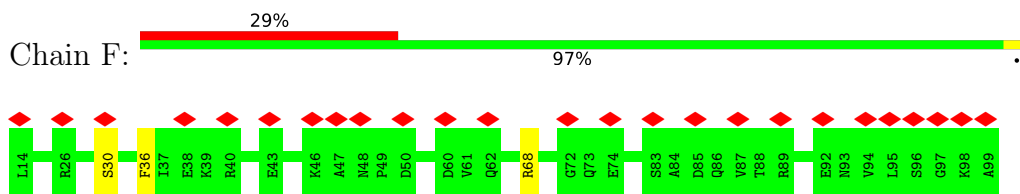
- Molecule 3: NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial



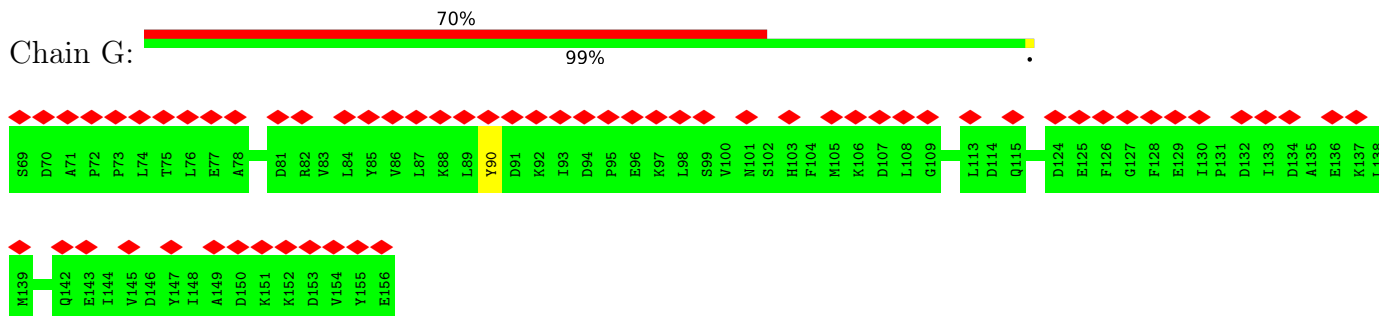
- Molecule 4: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 6



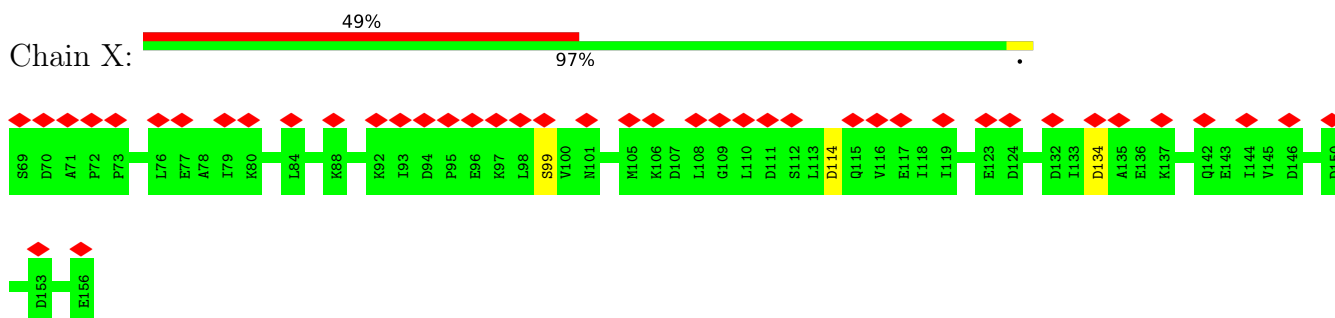
- Molecule 5: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2



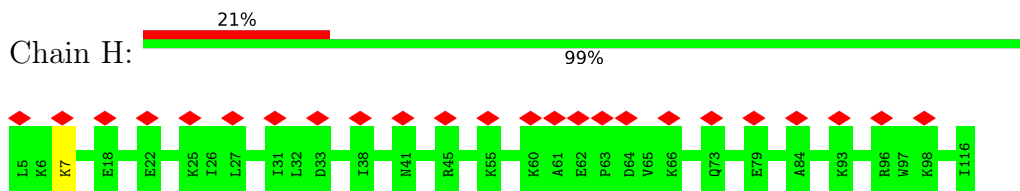
- Molecule 6: Acyl carrier protein



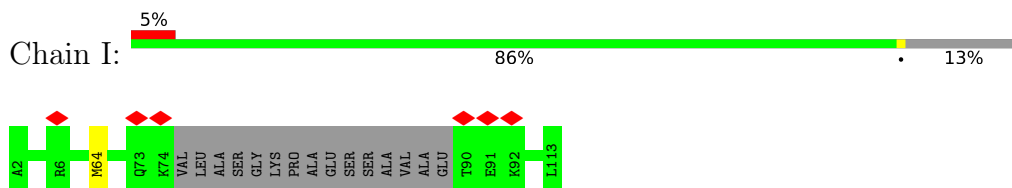
- Molecule 6: Acyl carrier protein



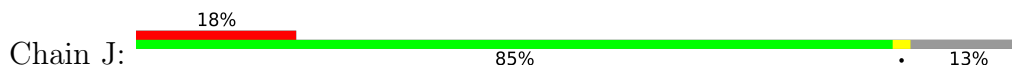
- Molecule 7: Complex I subunit B13

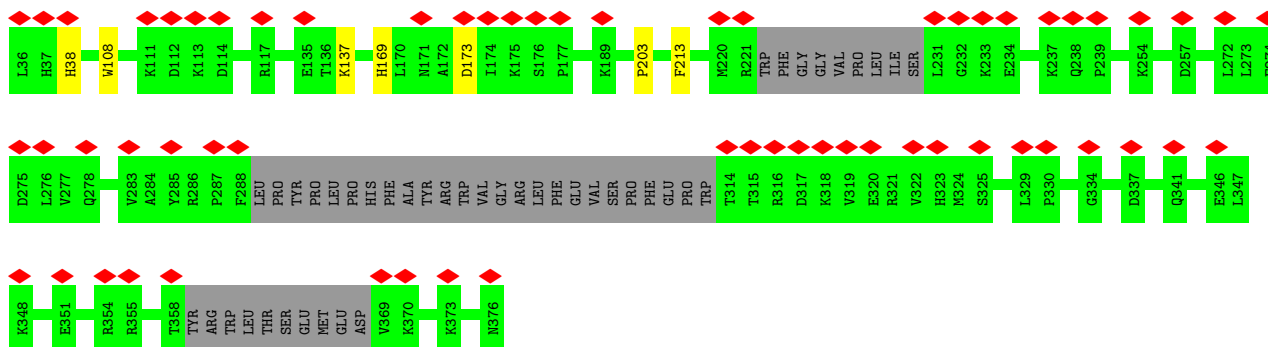


- Molecule 8: Complex I-B14.5a

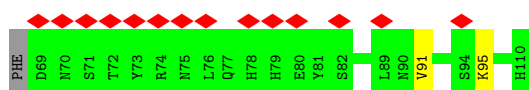
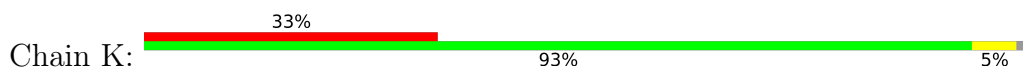


- Molecule 9: NADH dehydrogenase ubiquinone 1 alpha subcomplex subunit 9, mitochondrial

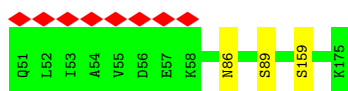




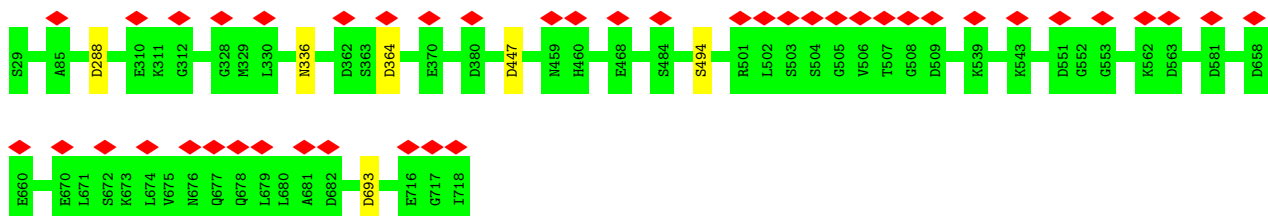
- Molecule 10: Complex I-9kD



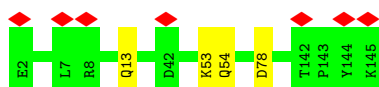
- Molecule 11: NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial



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

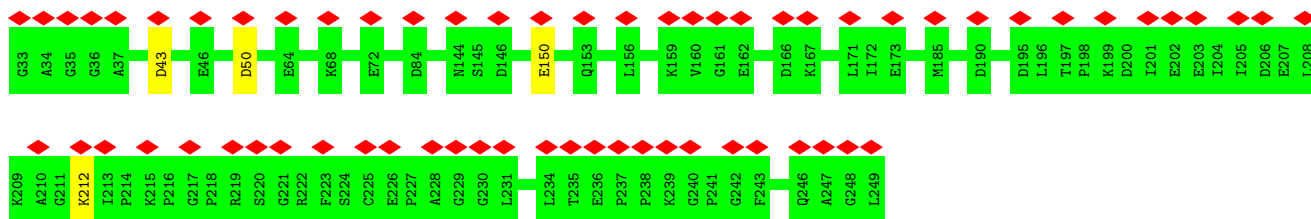


- Molecule 13: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 12



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

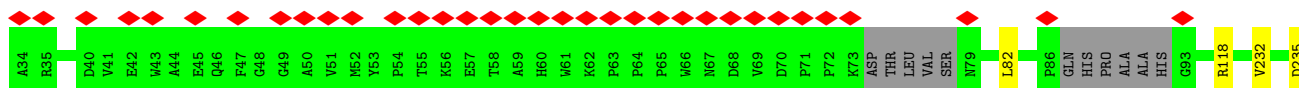




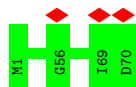
- Molecule 15: Complex I-30kD



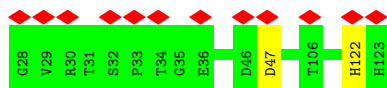
- Molecule 16: Complex I-49kD



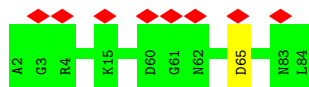
- Molecule 17: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1



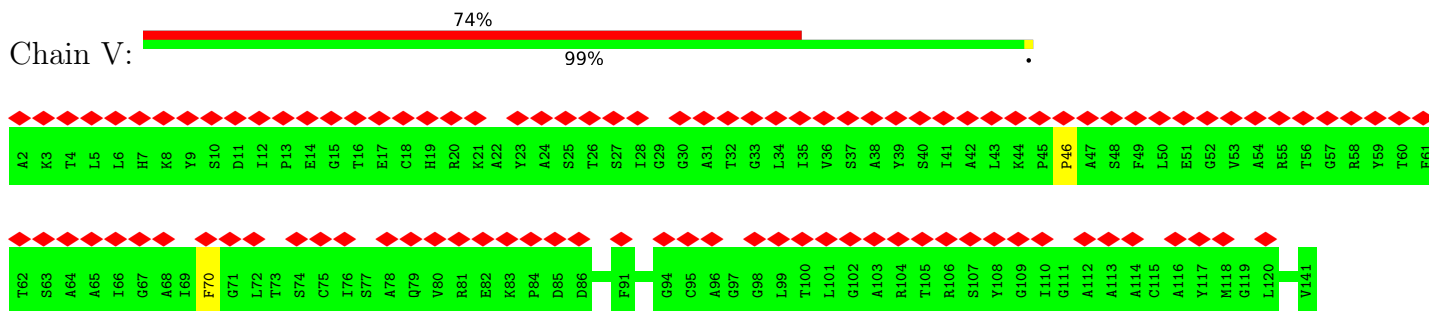
- Molecule 18: NADH dehydrogenase [ubiquinone] iron-sulfur protein 6, mitochondrial



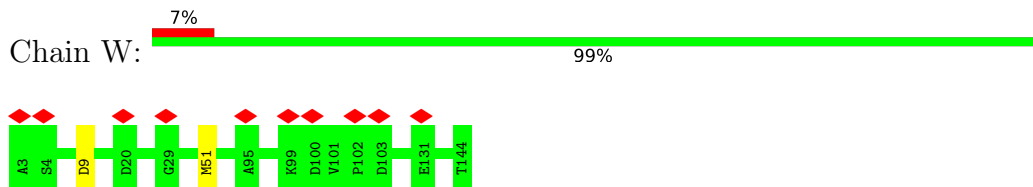
- Molecule 19: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3



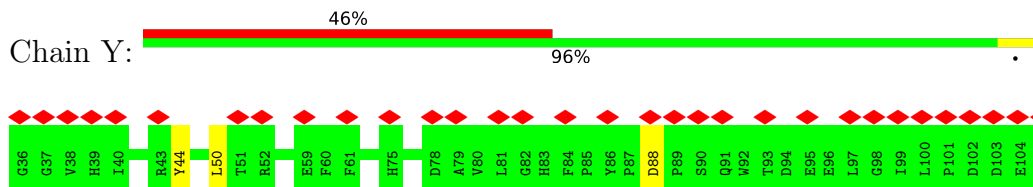
- Molecule 20: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11



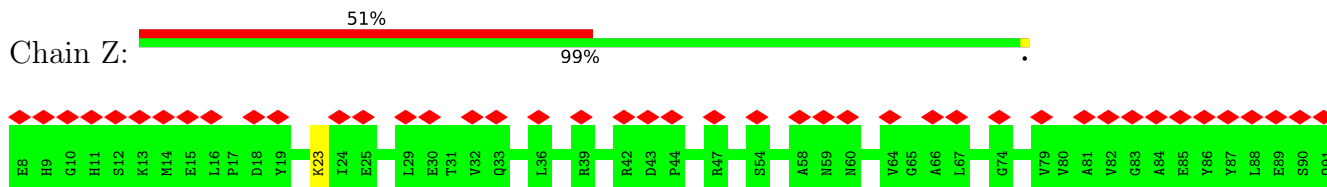
• Molecule 21: Complex I-B16.6



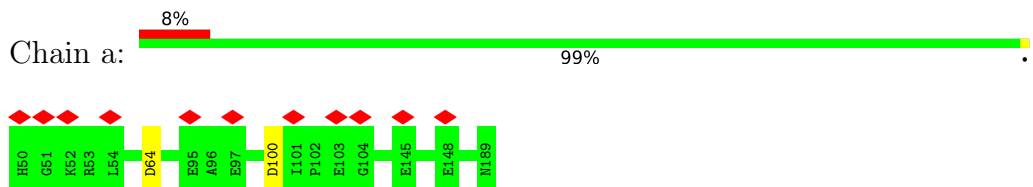
• Molecule 22: Complex I-AGGG



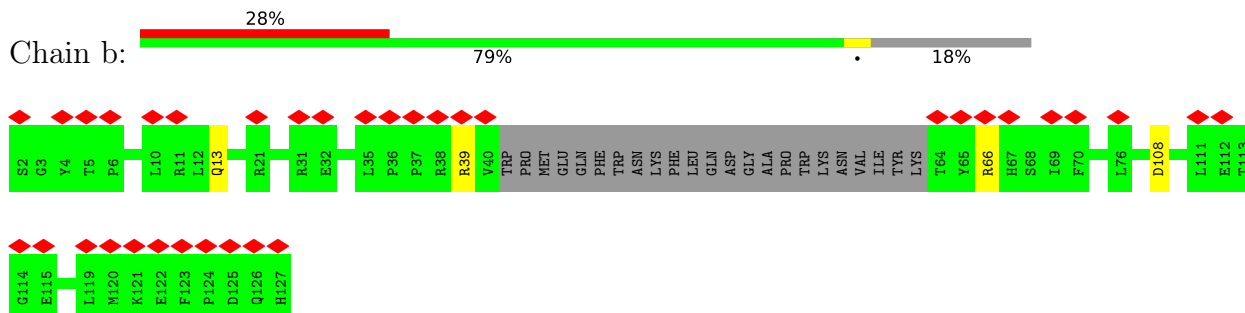
• Molecule 23: Complex I-B12



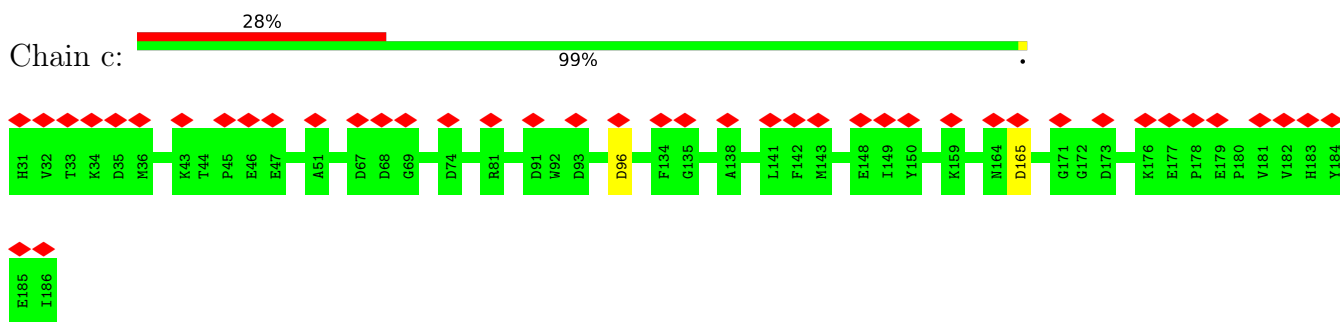
• Molecule 24: Complex I-SGDH



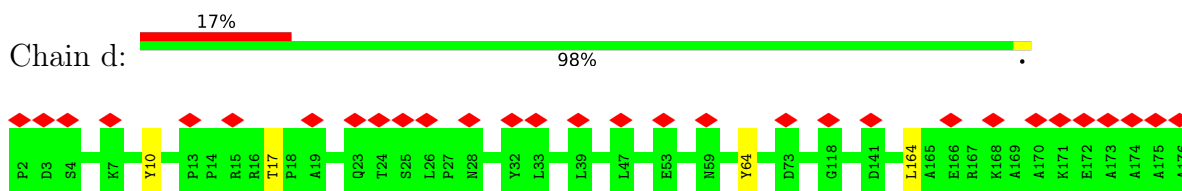
• Molecule 25: Complex I-B17



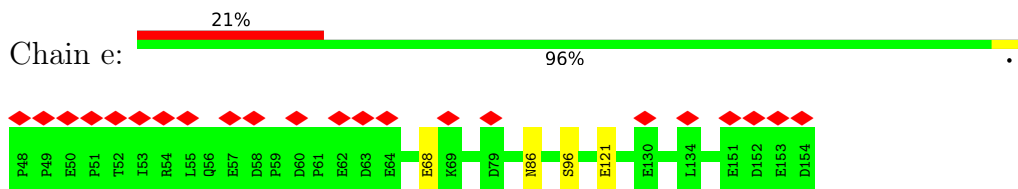
- Molecule 26: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial



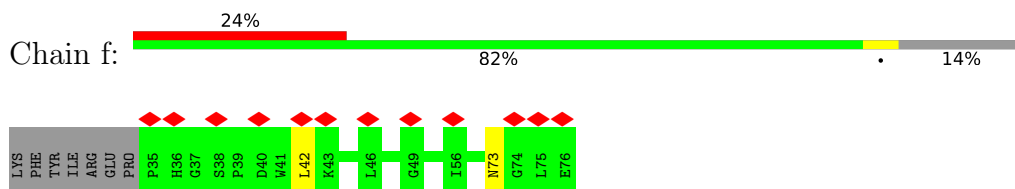
- Molecule 27: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10



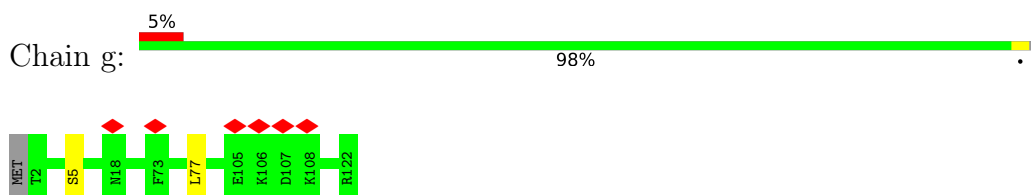
- Molecule 28: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial



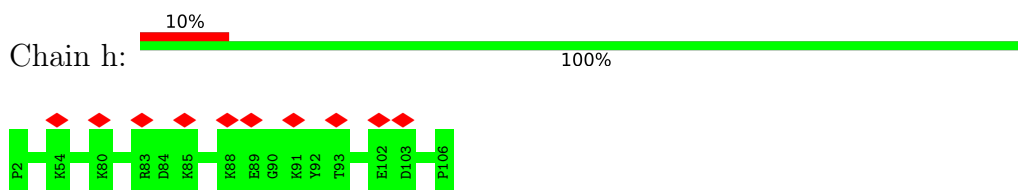
- Molecule 29: NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial



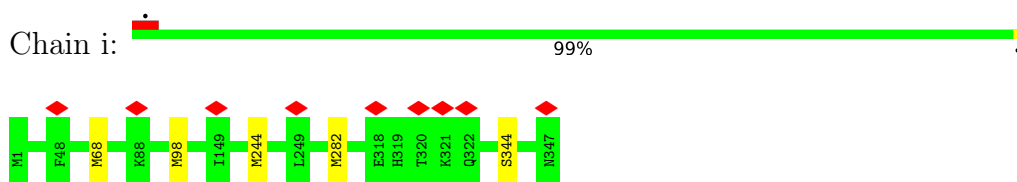
- Molecule 30: NADH dehydrogenase [ubiquinone] 1 subunit C2



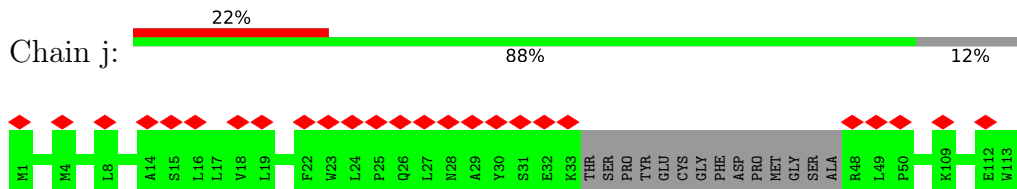
- Molecule 31: NADH dehydrogenase [ubiquinone] iron-sulfur protein 5



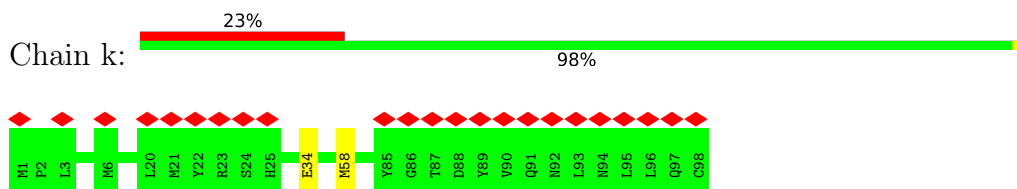
- Molecule 32: NADH-ubiquinone oxidoreductase chain 2



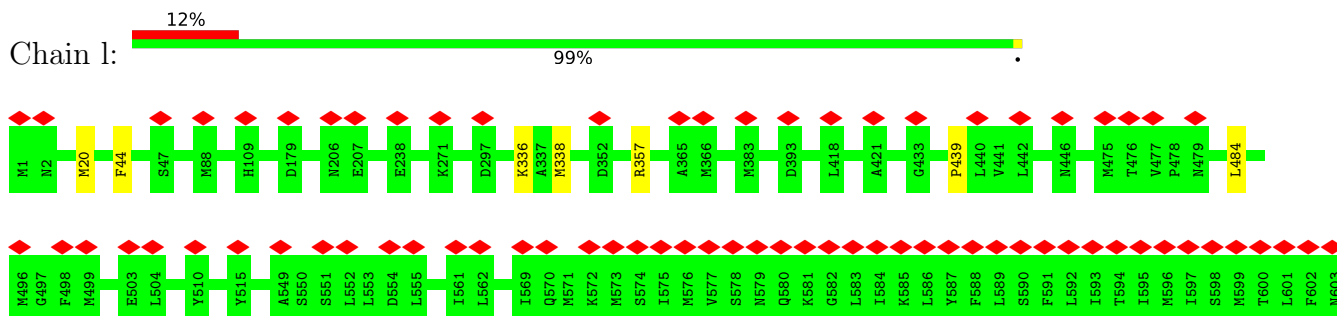
- Molecule 33: NADH-ubiquinone oxidoreductase chain 3



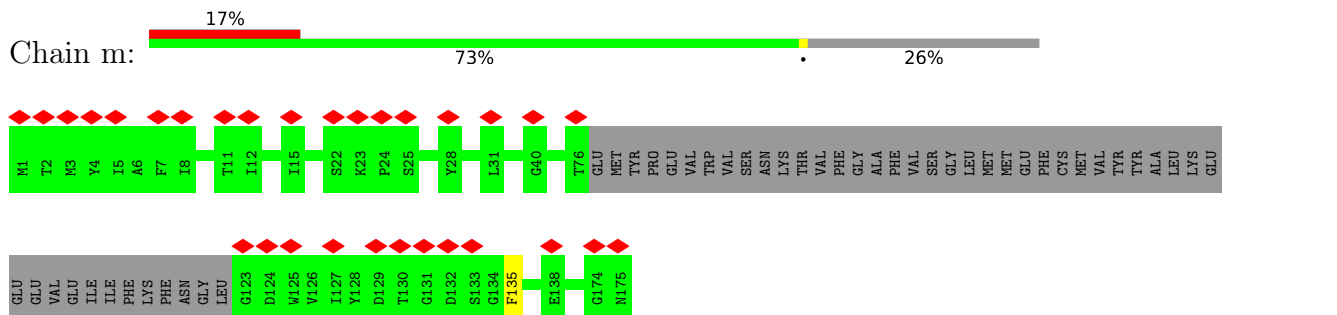
- Molecule 34: NADH-ubiquinone oxidoreductase chain 4L



- Molecule 35: NADH-ubiquinone oxidoreductase chain 5

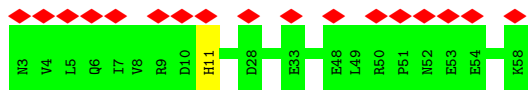


- Molecule 36: NADH-ubiquinone oxidoreductase chain 6

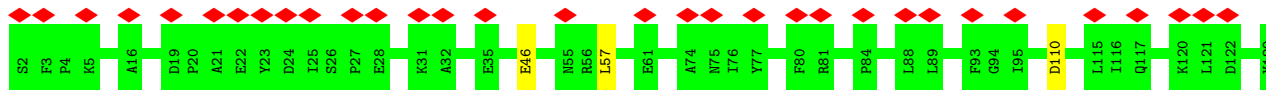


- Molecule 37: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1

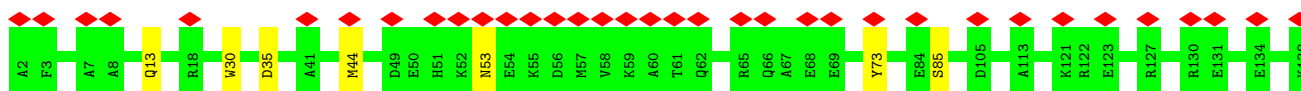




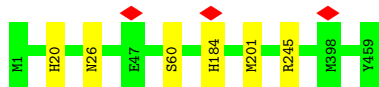
● Molecule 38: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4



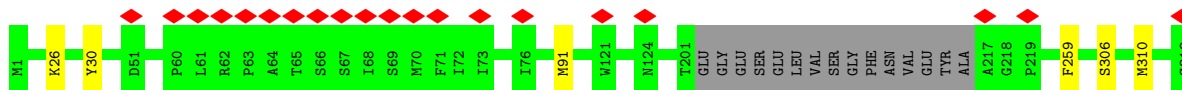
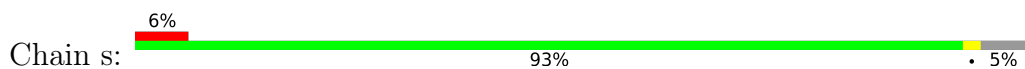
● Molecule 39: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 9



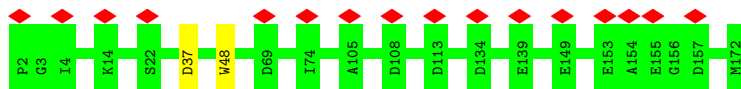
● Molecule 40: NADH-ubiquinone oxidoreductase chain 4



● Molecule 41: NADH-ubiquinone oxidoreductase chain 1

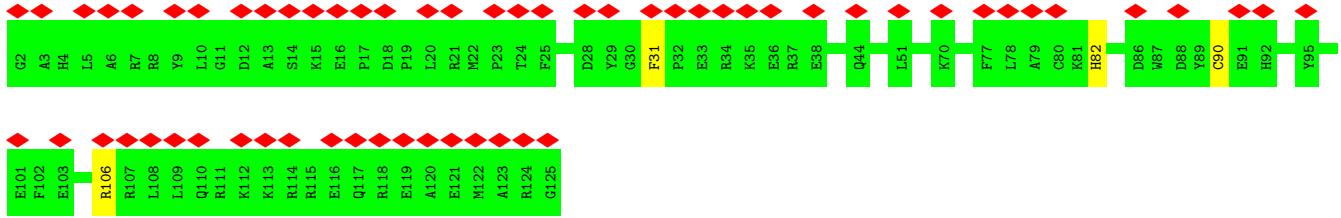


● Molecule 42: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8

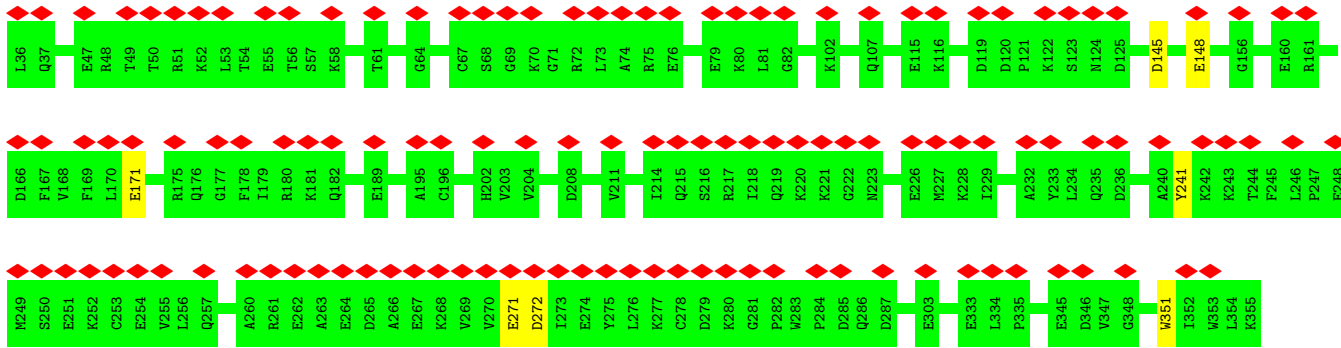


● Molecule 43: Complex I-B18





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



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	25219	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1300	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.231	Depositor
Minimum map value	-0.102	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.0299	Depositor
Map size (Å)	333.7616, 333.7616, 333.7616	wwPDB
Map dimensions	304, 304, 304	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0979, 1.0979, 1.0979	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: NAI, PLX, 2MR, UQ, MG, 8Q1, SF4, PEE, ADP, CDL, NDP, FES, FMN, ZN

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.26	0/3389	0.50	0/4580
2	B	0.31	0/1443	0.51	0/1952
3	C	0.30	0/1275	0.52	0/1725
4	E	0.26	0/992	0.57	0/1336
5	F	0.25	0/694	0.54	0/935
6	G	0.27	0/702	0.53	0/952
6	X	0.26	0/705	0.48	0/955
7	H	0.24	0/929	0.46	0/1258
8	I	0.27	0/798	0.56	0/1079
9	J	0.27	0/2391	0.51	0/3230
10	K	0.24	0/354	0.50	0/480
11	L	0.26	0/1025	0.49	0/1386
12	M	0.27	0/5384	0.50	0/7295
13	N	0.27	0/1233	0.54	0/1679
14	O	0.27	0/1711	0.50	0/2328
15	P	0.29	0/1789	0.51	0/2436
16	Q	0.30	0/3440	0.51	0/4659
17	S	0.27	0/578	0.52	0/778
18	T	0.28	0/755	0.52	0/1018
19	U	0.26	0/664	0.46	0/912
20	V	0.25	0/1038	0.47	0/1406
21	W	0.28	0/1198	0.52	0/1617
22	Y	0.25	0/623	0.47	0/853
23	Z	0.25	0/695	0.47	0/939
24	a	0.27	0/1199	0.49	0/1623
25	b	0.27	0/902	0.55	0/1227
26	c	0.28	0/1368	0.50	1/1871 (0.1%)
27	d	0.27	0/1478	0.50	0/1996
28	e	0.28	0/916	0.48	0/1246
29	f	0.27	0/346	0.51	0/468
30	g	0.29	0/1031	0.48	0/1394
31	h	0.26	0/889	0.52	0/1190

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	i	0.27	0/2773	0.46	0/3768
33	j	0.27	0/811	0.49	0/1106
34	k	0.27	0/759	0.50	0/1029
35	l	0.27	0/4892	0.47	1/6657 (0.0%)
36	m	0.29	0/970	0.46	0/1316
37	n	0.25	0/472	0.48	0/641
38	o	0.28	0/1092	0.56	1/1481 (0.1%)
39	p	0.28	0/1590	0.52	0/2155
40	r	0.27	0/3723	0.46	0/5078
41	s	0.29	0/2457	0.48	0/3360
42	u	0.27	0/1436	0.50	0/1938
43	v	0.28	0/1046	0.57	0/1404
44	w	0.27	0/2620	0.48	0/3551
All	All	0.27	0/66575	0.50	3/90287 (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
3	C	0	1

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
38	o	57	LEU	CA-CB-CG	5.66	128.31	115.30
35	l	439	PRO	CA-N-CD	-5.50	103.80	111.50
26	c	165	ASP	CB-CG-OD1	5.01	122.81	118.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	C	126	GLU	Peptide

5.2 Too-close contacts

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

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	429/433 (99%)	409 (95%)	20 (5%)	0	100	100
2	B	174/176 (99%)	170 (98%)	4 (2%)	0	100	100
3	C	154/156 (99%)	148 (96%)	6 (4%)	0	100	100
4	E	113/115 (98%)	111 (98%)	2 (2%)	0	100	100
5	F	84/86 (98%)	81 (96%)	3 (4%)	0	100	100
6	G	86/88 (98%)	83 (96%)	3 (4%)	0	100	100
6	X	86/88 (98%)	83 (96%)	3 (4%)	0	100	100
7	H	110/112 (98%)	101 (92%)	9 (8%)	0	100	100
8	I	93/112 (83%)	79 (85%)	14 (15%)	0	100	100
9	J	289/341 (85%)	275 (95%)	12 (4%)	2 (1%)	22	54
10	K	40/43 (93%)	39 (98%)	1 (2%)	0	100	100
11	L	123/125 (98%)	121 (98%)	2 (2%)	0	100	100
12	M	688/690 (100%)	665 (97%)	23 (3%)	0	100	100
13	N	142/144 (99%)	133 (94%)	9 (6%)	0	100	100
14	O	215/217 (99%)	208 (97%)	7 (3%)	0	100	100
15	P	206/208 (99%)	194 (94%)	12 (6%)	0	100	100
16	Q	412/430 (96%)	393 (95%)	17 (4%)	2 (0%)	29	61
17	S	68/70 (97%)	66 (97%)	2 (3%)	0	100	100
18	T	94/96 (98%)	92 (98%)	2 (2%)	0	100	100
19	U	81/83 (98%)	77 (95%)	4 (5%)	0	100	100
20	V	138/140 (99%)	131 (95%)	6 (4%)	1 (1%)	22	54
21	W	140/142 (99%)	138 (99%)	2 (1%)	0	100	100
22	Y	68/70 (97%)	64 (94%)	4 (6%)	0	100	100
23	Z	82/84 (98%)	77 (94%)	5 (6%)	0	100	100
24	a	138/140 (99%)	135 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
25	b	99/126 (79%)	91 (92%)	8 (8%)	0	100	100
26	c	154/156 (99%)	145 (94%)	9 (6%)	0	100	100
27	d	173/175 (99%)	172 (99%)	1 (1%)	0	100	100
28	e	105/107 (98%)	101 (96%)	4 (4%)	0	100	100
29	f	40/49 (82%)	38 (95%)	2 (5%)	0	100	100
30	g	119/122 (98%)	114 (96%)	5 (4%)	0	100	100
31	h	103/105 (98%)	98 (95%)	5 (5%)	0	100	100
32	i	345/347 (99%)	334 (97%)	11 (3%)	0	100	100
33	j	95/113 (84%)	88 (93%)	7 (7%)	0	100	100
34	k	96/98 (98%)	89 (93%)	7 (7%)	0	100	100
35	l	601/603 (100%)	571 (95%)	30 (5%)	0	100	100
36	m	125/175 (71%)	115 (92%)	10 (8%)	0	100	100
37	n	54/56 (96%)	53 (98%)	1 (2%)	0	100	100
38	o	126/128 (98%)	117 (93%)	9 (7%)	0	100	100
39	p	176/178 (99%)	163 (93%)	13 (7%)	0	100	100
40	r	457/459 (100%)	444 (97%)	13 (3%)	0	100	100
41	s	299/318 (94%)	283 (95%)	16 (5%)	0	100	100
42	u	169/171 (99%)	165 (98%)	4 (2%)	0	100	100
43	v	122/124 (98%)	113 (93%)	9 (7%)	0	100	100
44	w	318/320 (99%)	305 (96%)	13 (4%)	0	100	100
All	All	8029/8319 (96%)	7672 (96%)	352 (4%)	5 (0%)	54	81

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
9	J	203	PRO
16	Q	235	ASP
9	J	38	HIS
16	Q	232	VAL
20	V	46	PRO

5.3.2 Protein sidechains [i](#)

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

entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	344/346 (99%)	340 (99%)	4 (1%)	71	83
2	B	151/151 (100%)	149 (99%)	2 (1%)	69	82
3	C	131/132 (99%)	128 (98%)	3 (2%)	50	73
4	E	106/107 (99%)	102 (96%)	4 (4%)	33	62
5	F	73/76 (96%)	70 (96%)	3 (4%)	30	61
6	G	75/81 (93%)	74 (99%)	1 (1%)	69	82
6	X	76/81 (94%)	73 (96%)	3 (4%)	32	62
7	H	99/99 (100%)	98 (99%)	1 (1%)	76	86
8	I	87/97 (90%)	86 (99%)	1 (1%)	73	85
9	J	249/295 (84%)	244 (98%)	5 (2%)	55	76
10	K	37/42 (88%)	35 (95%)	2 (5%)	22	53
11	L	109/113 (96%)	106 (97%)	3 (3%)	43	70
12	M	580/580 (100%)	574 (99%)	6 (1%)	76	86
13	N	128/130 (98%)	124 (97%)	4 (3%)	40	67
14	O	183/183 (100%)	179 (98%)	4 (2%)	52	74
15	P	190/190 (100%)	187 (98%)	3 (2%)	62	79
16	Q	358/370 (97%)	355 (99%)	3 (1%)	81	89
17	S	57/58 (98%)	57 (100%)	0	100	100
18	T	79/79 (100%)	77 (98%)	2 (2%)	47	72
19	U	69/69 (100%)	68 (99%)	1 (1%)	67	82
20	V	99/101 (98%)	98 (99%)	1 (1%)	76	86
21	W	122/123 (99%)	120 (98%)	2 (2%)	62	79
22	Y	62/63 (98%)	59 (95%)	3 (5%)	25	56
23	Z	65/65 (100%)	64 (98%)	1 (2%)	65	81
24	a	122/122 (100%)	120 (98%)	2 (2%)	62	79
25	b	97/119 (82%)	93 (96%)	4 (4%)	30	61
26	c	140/141 (99%)	139 (99%)	1 (1%)	84	90
27	d	152/155 (98%)	148 (97%)	4 (3%)	46	71
28	e	99/99 (100%)	95 (96%)	4 (4%)	31	61

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
29	f	34/45 (76%)	32 (94%)	2 (6%)	19	49
30	g	108/109 (99%)	106 (98%)	2 (2%)	57	77
31	h	93/93 (100%)	93 (100%)	0	100	100
32	i	311/311 (100%)	306 (98%)	5 (2%)	62	79
33	j	87/99 (88%)	87 (100%)	0	100	100
34	k	85/85 (100%)	83 (98%)	2 (2%)	49	73
35	l	531/537 (99%)	525 (99%)	6 (1%)	73	85
36	m	98/141 (70%)	97 (99%)	1 (1%)	76	86
37	n	49/53 (92%)	48 (98%)	1 (2%)	55	76
38	o	113/113 (100%)	111 (98%)	2 (2%)	59	78
39	p	159/159 (100%)	152 (96%)	7 (4%)	28	59
40	r	410/410 (100%)	404 (98%)	6 (2%)	65	81
41	s	261/275 (95%)	255 (98%)	6 (2%)	50	73
42	u	153/153 (100%)	151 (99%)	2 (1%)	69	82
43	v	103/111 (93%)	99 (96%)	4 (4%)	32	62
44	w	277/283 (98%)	270 (98%)	7 (2%)	47	72
All	All	7011/7244 (97%)	6881 (98%)	130 (2%)	59	77

All (130) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	44	ASN
1	A	127	ASP
1	A	270	ASN
1	A	340	ASP
2	B	45	GLU
2	B	165	ASP
3	C	67	PHE
3	C	142	TYR
3	C	154	ASP
4	E	31	ARG
4	E	45	ASN
4	E	70	ASN
4	E	80	ASP
5	F	30	SER
5	F	36	PHE

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Mol	Chain	Res	Type
5	F	68	ARG
6	G	90	TYR
7	H	7	LYS
8	I	64	MET
9	J	108	TRP
9	J	137	LYS
9	J	169	HIS
9	J	173	ASP
9	J	213	PHE
10	K	91	VAL
10	K	95	LYS
11	L	86	ASN
11	L	89	SER
11	L	159	SER
12	M	288	ASP
12	M	336	ASN
12	M	364	ASP
12	M	447	ASP
12	M	494	SER
12	M	693	ASP
13	N	13	GLN
13	N	53	LYS
13	N	54	GLN
13	N	78	ASP
14	O	43	ASP
14	O	50	ASP
14	O	150	GLU
14	O	212	LYS
15	P	80	CYS
15	P	110	SER
15	P	231	ARG
16	Q	82	LEU
16	Q	236	LEU
16	Q	308	TYR
18	T	47	ASP
18	T	122	HIS
19	U	65	ASP
20	V	70	PHE
21	W	9	ASP
21	W	51	MET
6	X	99	SER
6	X	114	ASP

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Mol	Chain	Res	Type
6	X	134	ASP
22	Y	44	TYR
22	Y	50	LEU
22	Y	88	ASP
23	Z	23	LYS
24	a	64	ASP
24	a	100	ASP
25	b	13	GLN
25	b	39	ARG
25	b	66	ARG
25	b	108	ASP
26	c	96	ASP
27	d	10	TYR
27	d	17	THR
27	d	64	TYR
27	d	164	LEU
28	e	68	GLU
28	e	86	ASN
28	e	96	SER
28	e	121	GLU
29	f	42	LEU
29	f	73	ASN
30	g	5	SER
30	g	77	LEU
32	i	68	MET
32	i	98	MET
32	i	244	MET
32	i	282	MET
32	i	344	SER
34	k	34	GLU
34	k	58	MET
35	l	20	MET
35	l	44	PHE
35	l	336	LYS
35	l	338	MET
35	l	357	ARG
35	l	484	LEU
36	m	135	PHE
37	n	11	HIS
38	o	46	GLU
38	o	110	ASP
39	p	13	GLN

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Mol	Chain	Res	Type
39	p	30	TRP
39	p	35	ASP
39	p	44	MET
39	p	53	ASN
39	p	73	TYR
39	p	85	SER
40	r	20	HIS
40	r	26	ASN
40	r	60	SER
40	r	184	HIS
40	r	201	MET
40	r	245	ARG
41	s	26	LYS
41	s	30	TYR
41	s	91	MET
41	s	259	PHE
41	s	306	SER
41	s	310	MET
42	u	37	ASP
42	u	48	TRP
43	v	31	PHE
43	v	82	HIS
43	v	90	CYS
43	v	106	ARG
44	w	145	ASP
44	w	148	GLU
44	w	171	GLU
44	w	241	TYR
44	w	271	GLU
44	w	272	ASP
44	w	351	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	277	ASN
12	M	278	HIS
12	M	569	GLN
12	M	604	GLN
16	Q	190	HIS
17	S	31	ASN
20	V	89	ASN

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Mol	Chain	Res	Type
22	Y	46	GLN
30	g	119	HIS
31	h	70	GLN
32	i	174	GLN
32	i	268	GLN
34	k	57	ASN
37	n	14	HIS
40	r	26	ASN
40	r	192	ASN
40	r	251	ASN
42	u	16	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
16	2MR	Q	118	16	10,12,13	1.12	1 (10%)	5,13,15	1.68	2 (40%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
16	2MR	Q	118	16	-	5/10/13/15	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	Q	118	2MR	CZ-NH2	-3.05	1.26	1.33

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
16	Q	118	2MR	NE-CZ-NH2	2.91	122.15	119.48
16	Q	118	2MR	CQ2-NH2-CZ	2.25	128.83	123.86

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
16	Q	118	2MR	NH1-CZ-NE-CD
16	Q	118	2MR	NH2-CZ-NE-CD
16	Q	118	2MR	CA-CB-CG-CD
16	Q	118	2MR	NE-CD-CG-CB
16	Q	118	2MR	N-CA-CB-CG

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 34 ligands modelled in this entry, 2 are monoatomic - leaving 32 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
54	PEE	Q	501	-	50,50,50	1.15	6 (12%)	53,55,55	1.00	3 (5%)
46	FMN	A	502	-	33,33,33	1.10	2 (6%)	48,50,50	1.22	8 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
45	SF4	M	801	12	0,12,12	-	-	-		
45	SF4	B	301	2	0,12,12	-	-	-		
51	NDP	J	401	-	45,52,52	4.56	20 (44%)	53,80,80	2.01	7 (13%)
56	UQ	s	401	-	28,28,63	3.29	7 (25%)	34,37,79	2.71	10 (29%)
54	PEE	r	501	-	50,50,50	1.15	6 (12%)	53,55,55	0.98	2 (3%)
48	PLX	r	502	-	51,51,51	1.13	3 (5%)	55,59,59	0.61	1 (1%)
54	PEE	m	201	-	40,40,50	1.14	4 (10%)	43,45,55	1.04	2 (4%)
50	CDL	i	401	-	65,65,99	1.28	8 (12%)	71,77,111	1.03	4 (5%)
52	FES	M	803	12	0,4,4	-	-	-		
50	CDL	g	202	-	99,99,99	1.08	8 (8%)	105,111,111	0.86	4 (3%)
54	PEE	b	201	-	45,45,50	1.21	6 (13%)	48,50,55	0.95	2 (4%)
54	PEE	i	402	-	46,46,50	1.21	6 (13%)	49,51,55	1.02	2 (4%)
54	PEE	U	101	-	50,50,50	1.14	6 (12%)	53,55,55	0.98	2 (3%)
49	8Q1	X	201	-	31,34,34	1.72	6 (19%)	40,43,43	1.53	6 (15%)
57	ADP	w	401	-	24,29,29	3.13	6 (25%)	29,45,45	1.43	4 (13%)
45	SF4	M	802	12	0,12,12	-	-	-		
48	PLX	j	202	-	51,51,51	1.15	4 (7%)	55,59,59	0.60	1 (1%)
47	NAI	A	503	-	42,48,48	4.94	19 (45%)	47,73,73	1.33	7 (14%)
48	PLX	g	201	-	51,51,51	1.13	3 (5%)	55,59,59	0.62	1 (1%)
54	PEE	l	701	-	45,45,50	1.22	6 (13%)	48,50,55	0.99	2 (4%)
54	PEE	j	201	-	46,46,50	1.21	6 (13%)	49,51,55	0.95	2 (4%)
50	CDL	I	201	-	50,50,99	1.40	8 (16%)	56,62,111	1.14	4 (7%)
50	CDL	a	201	-	90,90,99	1.12	8 (8%)	96,102,111	0.93	4 (4%)
49	8Q1	G	201	-	31,34,34	1.69	5 (16%)	40,43,43	1.57	6 (15%)
45	SF4	C	301	16,3	0,12,12	-	-	-		
52	FES	O	301	14	0,4,4	-	-	-		
48	PLX	a	202	-	51,51,51	0.61	0	55,59,59	0.66	0
45	SF4	B	302	2	0,12,12	-	-	-		
48	PLX	C	302	-	51,51,51	1.14	3 (5%)	55,59,59	0.64	1 (1%)
45	SF4	A	501	1	0,12,12	-	-	-		

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
54	PEE	Q	501	-	-	21/54/54/54	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
46	FMN	A	502	-	-	2/18/18/18	0/3/3/3
45	SF4	M	801	12	-	-	0/6/5/5
45	SF4	B	301	2	-	-	0/6/5/5
51	NDP	J	401	-	-	11/30/77/77	0/4/5/5
56	UQ	s	401	-	-	9/21/45/87	0/1/1/1
54	PEE	r	501	-	-	26/54/54/54	-
48	PLX	r	502	-	-	36/55/55/55	-
54	PEE	m	201	-	-	18/44/44/54	-
50	CDL	i	401	-	-	36/76/76/110	-
52	FES	M	803	12	-	-	0/1/1/1
50	CDL	g	202	-	-	64/110/110/110	-
54	PEE	b	201	-	-	26/49/49/54	-
54	PEE	i	402	-	-	25/50/50/54	-
54	PEE	U	101	-	-	30/54/54/54	-
49	8Q1	X	201	-	-	20/41/41/41	-
45	SF4	M	802	12	-	-	0/6/5/5
48	PLX	j	202	-	-	31/55/55/55	-
47	NAI	A	503	-	-	6/25/72/72	0/5/5/5
48	PLX	g	201	-	-	25/55/55/55	-
54	PEE	l	701	-	-	25/49/49/54	-
54	PEE	j	201	-	-	22/50/50/54	-
45	SF4	B	302	2	-	-	0/6/5/5
50	CDL	a	201	-	-	36/101/101/110	-
50	CDL	I	201	-	-	40/61/61/110	-
49	8Q1	G	201	-	-	20/41/41/41	-
45	SF4	C	301	16,3	-	-	0/6/5/5
52	FES	O	301	14	-	-	0/1/1/1
48	PLX	a	202	-	-	13/55/55/55	-
57	ADP	w	401	-	-	4/12/32/32	0/3/3/3
48	PLX	C	302	-	-	28/55/55/55	-
45	SF4	A	501	1	-	-	0/6/5/5

All (156) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
47	A	503	NAI	O4B-C1B	16.16	1.63	1.41
47	A	503	NAI	C2B-C1B	-15.53	1.30	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
51	J	401	NDP	C3B-C2B	-12.79	1.24	1.52
51	J	401	NDP	C6N-C5N	12.45	1.55	1.33
51	J	401	NDP	O4D-C4D	10.69	1.68	1.45
47	A	503	NAI	C3D-C4D	-10.28	1.26	1.53
51	J	401	NDP	C3D-C4D	-9.84	1.27	1.53
56	s	401	UQ	C13-C14	9.34	1.55	1.33
56	s	401	UQ	C8-C9	8.94	1.54	1.33
57	w	401	ADP	C3'-C4'	-8.81	1.30	1.53
47	A	503	NAI	O4B-C4B	-8.27	1.26	1.45
56	s	401	UQ	C18-C19	8.27	1.56	1.32
51	J	401	NDP	O4B-C1B	8.21	1.52	1.41
51	J	401	NDP	O4B-C4B	-8.07	1.27	1.45
57	w	401	ADP	O4'-C4'	7.78	1.62	1.45
47	A	503	NAI	C2D-C1D	-7.61	1.29	1.53
51	J	401	NDP	C2N-C3N	7.39	1.55	1.34
57	w	401	ADP	O4'-C1'	-6.94	1.31	1.41
47	A	503	NAI	O4D-C4D	6.89	1.60	1.45
47	A	503	NAI	C2D-C3D	5.93	1.69	1.53
47	A	503	NAI	C7N-N7N	5.77	1.48	1.33
51	J	401	NDP	P2B-O2B	5.65	1.70	1.59
49	X	201	8Q1	C39-N41	5.52	1.45	1.33
49	X	201	8Q1	C34-N36	5.45	1.45	1.33
49	G	201	8Q1	C34-N36	5.39	1.45	1.33
47	A	503	NAI	O4D-C1D	5.35	1.54	1.42
49	G	201	8Q1	C39-N41	5.35	1.45	1.33
51	J	401	NDP	C3B-C4B	5.33	1.66	1.53
47	A	503	NAI	C4N-C3N	-5.12	1.39	1.49
51	J	401	NDP	C6N-N1N	4.94	1.49	1.37
51	J	401	NDP	O4D-C1D	-4.92	1.30	1.42
47	A	503	NAI	O2B-C2B	4.50	1.53	1.43
51	J	401	NDP	O2D-C2D	-4.22	1.33	1.43
51	J	401	NDP	C7N-N7N	4.19	1.44	1.33
51	J	401	NDP	C6A-N6A	4.09	1.49	1.34
47	A	503	NAI	C6N-C5N	3.96	1.40	1.33
57	w	401	ADP	C6-N6	3.85	1.48	1.34
46	A	502	FMN	C4A-N5	3.82	1.38	1.30
54	j	201	PEE	C18-C19	3.75	1.53	1.31
54	m	201	PEE	C18-C19	3.74	1.53	1.31
54	i	402	PEE	C18-C19	3.73	1.53	1.31
54	r	501	PEE	C18-C19	3.72	1.53	1.31
54	Q	501	PEE	C18-C19	3.72	1.53	1.31
54	b	201	PEE	C18-C19	3.70	1.53	1.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	l	701	PEE	C18-C19	3.69	1.53	1.31
54	U	101	PEE	C18-C19	3.68	1.53	1.31
54	j	201	PEE	C39-C38	3.66	1.53	1.31
54	i	402	PEE	C39-C38	3.65	1.52	1.31
54	r	501	PEE	C39-C38	3.65	1.52	1.31
54	b	201	PEE	C39-C38	3.65	1.52	1.31
54	l	701	PEE	C39-C38	3.63	1.52	1.31
54	U	101	PEE	C39-C38	3.63	1.52	1.31
54	Q	501	PEE	C39-C38	3.62	1.52	1.31
47	A	503	NAI	C6A-N6A	3.57	1.47	1.34
47	A	503	NAI	C7N-C3N	3.56	1.56	1.48
50	i	401	CDL	OA8-CA7	3.50	1.43	1.33
50	I	201	CDL	OA8-CA7	3.45	1.43	1.33
50	g	202	CDL	OA8-CA7	3.41	1.43	1.33
47	A	503	NAI	C4N-C5N	-3.40	1.40	1.48
50	a	201	CDL	OA8-CA7	3.37	1.43	1.33
57	w	401	ADP	O2'-C2'	-3.35	1.35	1.43
57	w	401	ADP	O3'-C3'	3.15	1.50	1.43
50	a	201	CDL	OB6-CB5	3.08	1.43	1.34
51	J	401	NDP	O3D-C3D	3.07	1.50	1.43
50	i	401	CDL	OB6-CB5	3.04	1.42	1.34
51	J	401	NDP	C7N-C3N	3.03	1.55	1.48
50	I	201	CDL	OB8-CB7	3.02	1.42	1.33
50	g	202	CDL	OB6-CB5	3.00	1.42	1.34
50	I	201	CDL	OB6-CB5	3.00	1.42	1.34
50	i	401	CDL	OA6-CA5	2.99	1.42	1.34
50	i	401	CDL	OB8-CB7	2.98	1.42	1.33
50	g	202	CDL	OB8-CB7	2.97	1.42	1.33
50	a	201	CDL	OA6-CA5	2.94	1.42	1.34
50	I	201	CDL	OA6-CA5	2.93	1.42	1.34
50	a	201	CDL	OB8-CB7	2.92	1.41	1.33
50	g	202	CDL	OA6-CA5	2.89	1.42	1.34
48	C	302	PLX	O6-C4	-2.87	1.40	1.44
48	r	502	PLX	O6-C4	-2.86	1.40	1.44
48	g	201	PLX	O6-C4	-2.84	1.40	1.44
56	s	401	UQ	C6-C1	2.68	1.54	1.46
54	Q	501	PEE	O2-C2	-2.62	1.40	1.46
48	j	202	PLX	O6-C4	-2.53	1.41	1.44
54	l	701	PEE	O3-C30	2.51	1.40	1.33
54	j	201	PEE	O3-C30	2.49	1.40	1.33
54	l	701	PEE	O2-C2	-2.49	1.40	1.46
47	A	503	NAI	O3B-C3B	-2.48	1.37	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	U	101	PEE	O2-C2	-2.48	1.40	1.46
54	i	402	PEE	O3-C30	2.47	1.40	1.33
50	g	202	CDL	OA6-CA4	-2.46	1.40	1.46
54	b	201	PEE	O3-C30	2.44	1.40	1.33
54	b	201	PEE	O2-C2	-2.44	1.40	1.46
49	X	201	8Q1	C1-S44	2.43	1.82	1.76
54	r	501	PEE	O2-C2	-2.43	1.40	1.46
54	m	201	PEE	O3-C30	2.43	1.40	1.33
47	A	503	NAI	PN-O5D	2.42	1.69	1.59
51	J	401	NDP	O2B-C2B	2.42	1.52	1.44
54	U	101	PEE	O3-C30	2.42	1.40	1.33
54	Q	501	PEE	O3-C30	2.41	1.40	1.33
50	a	201	CDL	OA6-CA4	-2.40	1.40	1.46
50	I	201	CDL	OA6-CA4	-2.39	1.40	1.46
54	m	201	PEE	O2-C10	2.38	1.41	1.34
49	X	201	8Q1	C6-C1	2.37	1.53	1.50
46	A	502	FMN	C10-N1	2.37	1.38	1.33
48	j	202	PLX	C7-C6	2.37	1.55	1.50
54	j	201	PEE	O2-C2	-2.37	1.40	1.46
49	G	201	8Q1	C1-S44	2.36	1.81	1.76
54	r	501	PEE	O3-C30	2.35	1.40	1.33
54	i	402	PEE	O2-C10	2.34	1.40	1.34
49	G	201	8Q1	O35-C34	-2.32	1.18	1.23
51	J	401	NDP	C2D-C3D	2.32	1.59	1.53
54	j	201	PEE	O2-C10	2.31	1.40	1.34
50	i	401	CDL	OA6-CA4	-2.30	1.40	1.46
48	g	201	PLX	C7-C6	2.30	1.55	1.50
54	i	402	PEE	O2-C2	-2.29	1.40	1.46
48	r	502	PLX	C7-C6	2.28	1.55	1.50
54	b	201	PEE	O2-C10	2.26	1.40	1.34
50	i	401	CDL	PB2-OB2	2.25	1.68	1.59
49	G	201	8Q1	O40-C39	-2.25	1.18	1.23
56	s	401	UQ	O4-C4	-2.25	1.18	1.23
48	C	302	PLX	C7-C6	2.24	1.55	1.50
50	i	401	CDL	PB2-OB5	2.23	1.68	1.59
49	X	201	8Q1	O35-C34	-2.22	1.19	1.23
54	m	201	PEE	O2-C2	-2.22	1.41	1.46
56	s	401	UQ	C7-C8	2.21	1.53	1.50
54	l	701	PEE	O2-C10	2.20	1.40	1.34
50	g	202	CDL	PB2-OB2	2.20	1.68	1.59
48	j	202	PLX	P1-O4	2.20	1.68	1.59
54	U	101	PEE	O2-C10	2.19	1.40	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	r	501	PEE	O2-C10	2.19	1.40	1.34
50	i	401	CDL	OB6-CB4	-2.17	1.41	1.46
49	X	201	8Q1	O40-C39	-2.17	1.18	1.23
47	A	503	NAI	C5B-C4B	2.17	1.58	1.51
50	I	201	CDL	PB2-OB5	2.17	1.68	1.59
50	I	201	CDL	OB6-CB4	-2.16	1.41	1.46
54	U	101	PEE	O3-C3	-2.15	1.40	1.45
51	J	401	NDP	O7N-C7N	-2.15	1.19	1.24
54	l	701	PEE	O3-C3	-2.15	1.40	1.45
54	r	501	PEE	O3-C3	-2.15	1.40	1.45
50	g	202	CDL	PB2-OB5	2.15	1.68	1.59
50	g	202	CDL	OB6-CB4	-2.14	1.41	1.46
50	a	201	CDL	PB2-OB5	2.13	1.67	1.59
50	I	201	CDL	PB2-OB2	2.13	1.67	1.59
50	a	201	CDL	PB2-OB2	2.12	1.67	1.59
54	Q	501	PEE	O2-C10	2.10	1.40	1.34
50	a	201	CDL	OB6-CB4	-2.09	1.41	1.46
54	b	201	PEE	O3-C3	-2.08	1.40	1.45
48	g	201	PLX	P1-O4	2.08	1.67	1.59
54	Q	501	PEE	O3-C3	-2.07	1.40	1.45
54	i	402	PEE	O3-C3	-2.07	1.40	1.45
48	j	202	PLX	P1-O1	2.06	1.67	1.59
47	A	503	NAI	C2N-C3N	2.05	1.40	1.34
48	r	502	PLX	P1-O4	2.04	1.67	1.59
51	J	401	NDP	PA-O5B	2.03	1.67	1.59
56	s	401	UQ	O1-C1	-2.01	1.19	1.23
54	j	201	PEE	O3-C3	-2.00	1.40	1.45
48	C	302	PLX	P1-O1	2.00	1.67	1.59

All (85) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
56	s	401	UQ	C7-C8-C9	-9.26	111.38	126.79
51	J	401	NDP	C3N-C2N-N1N	-8.48	111.00	123.10
51	J	401	NDP	C1D-N1N-C2N	-6.65	110.04	121.11
49	G	201	8Q1	C6-C1-S44	6.05	120.50	113.46
49	X	201	8Q1	C6-C1-S44	5.97	120.41	113.46
56	s	401	UQ	C12-C13-C14	-5.85	113.58	127.66
51	J	401	NDP	C1D-N1N-C6N	-5.27	109.48	120.83
57	w	401	ADP	N3-C2-N1	-4.54	121.58	128.68
56	s	401	UQ	C11-C9-C8	-4.54	111.92	121.12
56	s	401	UQ	C10-C9-C8	-4.48	112.19	123.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	m	201	PEE	O2-C10-C11	4.31	120.78	111.50
47	A	503	NAI	N3A-C2A-N1A	-4.26	122.02	128.68
50	a	201	CDL	OA6-CA5-C11	4.23	120.63	111.50
54	i	402	PEE	O2-C10-C11	4.16	120.46	111.50
50	i	401	CDL	OA6-CA5-C11	4.14	120.43	111.50
51	J	401	NDP	N3A-C2A-N1A	-4.13	122.23	128.68
50	a	201	CDL	OB6-CB5-C51	4.10	120.34	111.50
54	Q	501	PEE	O2-C10-C11	4.07	120.26	111.50
54	r	501	PEE	O2-C10-C11	4.05	120.23	111.50
50	g	202	CDL	OB6-CB5-C51	4.00	120.13	111.50
50	I	201	CDL	OA6-CA5-C11	4.00	120.12	111.50
50	i	401	CDL	OB6-CB5-C51	3.99	120.10	111.50
50	I	201	CDL	OB6-CB5-C51	3.97	120.06	111.50
56	s	401	UQ	C17-C18-C19	-3.97	114.19	127.75
54	l	701	PEE	O2-C10-C11	3.91	119.94	111.50
56	s	401	UQ	C15-C14-C13	-3.84	113.83	123.68
50	g	202	CDL	OA6-CA5-C11	3.83	119.76	111.50
54	j	201	PEE	O2-C10-C11	3.82	119.73	111.50
54	U	101	PEE	O2-C10-C11	3.81	119.71	111.50
56	s	401	UQ	C16-C14-C13	-3.80	113.43	121.12
54	b	201	PEE	O2-C10-C11	3.60	119.25	111.50
49	G	201	8Q1	O4-C1-C6	-3.60	119.74	123.99
49	X	201	8Q1	O4-C1-C6	-3.43	119.94	123.99
56	s	401	UQ	C21-C19-C18	-3.34	113.00	122.65
49	G	201	8Q1	C37-C38-C39	3.16	117.61	112.36
47	A	503	NAI	C4D-O4D-C1D	-3.15	102.53	109.47
46	A	502	FMN	C4-N3-C2	-3.12	119.88	125.64
56	s	401	UQ	C20-C19-C18	-3.00	113.96	122.65
56	s	401	UQ	CM5-C5-C6	-2.91	119.65	124.40
47	A	503	NAI	C3D-C2D-C1D	2.79	106.73	101.43
47	A	503	NAI	PN-O3-PA	-2.77	123.32	132.83
51	J	401	NDP	C2B-C3B-C4B	2.76	107.98	101.99
54	l	701	PEE	O3-C30-C31	2.73	120.49	111.91
50	I	201	CDL	OB8-CB7-C71	2.72	120.45	111.91
54	r	501	PEE	O3-C30-C31	2.72	120.43	111.91
50	i	401	CDL	OB8-CB7-C71	2.70	120.39	111.91
54	m	201	PEE	O3-C30-C31	2.70	120.37	111.91
50	i	401	CDL	OA8-CA7-C31	2.69	120.36	111.91
47	A	503	NAI	C4A-C5A-N7A	-2.68	106.61	109.40
50	I	201	CDL	OA8-CA7-C31	2.67	120.30	111.91
54	Q	501	PEE	O3-C30-C31	2.67	120.30	111.91
46	A	502	FMN	C4A-C4-N3	2.66	119.95	113.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
50	a	201	CDL	OB8-CB7-C71	2.66	120.25	111.91
51	J	401	NDP	PN-O3-PA	-2.61	123.86	132.83
50	g	202	CDL	OB8-CB7-C71	2.61	120.10	111.91
47	A	503	NAI	C2D-C3D-C4D	2.60	107.69	102.64
54	U	101	PEE	O3-C30-C31	2.60	120.06	111.91
57	w	401	ADP	O4'-C1'-C2'	-2.59	103.14	106.93
54	i	402	PEE	O3-C30-C31	2.56	119.95	111.91
48	g	201	PLX	C1A-N1-C1	2.55	120.33	109.92
54	j	201	PEE	O3-C30-C31	2.55	119.90	111.91
54	b	201	PEE	O3-C30-C31	2.54	119.88	111.91
49	X	201	8Q1	C37-C38-C39	2.54	116.58	112.36
50	g	202	CDL	OA8-CA7-C31	2.50	119.76	111.91
46	A	502	FMN	C4A-C10-N10	2.48	120.10	116.48
48	r	502	PLX	C1A-N1-C1	2.48	120.05	109.92
46	A	502	FMN	O4-C4-C4A	-2.47	120.06	126.60
50	a	201	CDL	OA8-CA7-C31	2.46	119.62	111.91
48	j	202	PLX	C1A-N1-C1	2.43	119.84	109.92
57	w	401	ADP	PA-O3A-PB	-2.37	124.68	132.83
51	J	401	NDP	C4A-C5A-N7A	-2.33	106.97	109.40
49	X	201	8Q1	C43-S44-C1	2.28	108.97	101.87
49	X	201	8Q1	O4-C1-S44	-2.28	119.65	122.61
48	C	302	PLX	C1A-N1-C1	2.26	119.17	109.92
57	w	401	ADP	C4-C5-N7	-2.26	107.04	109.40
49	X	201	8Q1	C38-C39-N41	2.25	120.21	116.42
46	A	502	FMN	C10-C4A-N5	-2.24	120.10	124.86
54	Q	501	PEE	C2-O2-C10	-2.22	112.31	117.79
49	G	201	8Q1	O4-C1-S44	-2.20	119.75	122.61
49	G	201	8Q1	C43-S44-C1	2.16	108.60	101.87
46	A	502	FMN	C9A-C5A-N5	-2.16	120.08	122.43
49	G	201	8Q1	C38-C39-N41	2.13	120.00	116.42
47	A	503	NAI	C3B-C2B-C1B	2.11	104.15	100.98
46	A	502	FMN	C4A-C10-N1	-2.10	119.86	124.73
46	A	502	FMN	C5A-C9A-N10	2.09	120.11	117.95

There are no chirality outliers.

All (574) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
46	A	502	FMN	N10-C1'-C2'-O2'
46	A	502	FMN	N10-C1'-C2'-C3'
47	A	503	NAI	C5B-O5B-PA-O1A
48	C	302	PLX	C3-C4-O6-C6

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Mol	Chain	Res	Type	Atoms
48	C	302	PLX	N1-C1-C2-O1
48	g	201	PLX	O7-C6-O6-C4
48	g	201	PLX	C3-O4-P1-O2
48	g	201	PLX	O9-C24-O8-C5
48	j	202	PLX	O7-C6-C7-C8
48	j	202	PLX	C7-C6-O6-C4
48	j	202	PLX	O7-C6-O6-C4
48	j	202	PLX	C3-O4-P1-O3
48	r	502	PLX	O7-C6-O6-C4
48	r	502	PLX	C3-O4-P1-O2
48	r	502	PLX	C2-O1-P1-O4
48	r	502	PLX	C2-O1-P1-O2
48	r	502	PLX	C2-O1-P1-O3
48	r	502	PLX	O9-C24-O8-C5
48	r	502	PLX	O9-C24-C25-C26
49	G	201	8Q1	C1-C6-C7-C8
49	G	201	8Q1	O4-C1-S44-C43
49	G	201	8Q1	C6-C1-S44-C43
49	G	201	8Q1	C28-C29-C32-C34
49	G	201	8Q1	C28-C29-C32-O33
49	G	201	8Q1	C31-C29-C32-C34
49	G	201	8Q1	C31-C29-C32-O33
49	G	201	8Q1	N41-C42-C43-S44
49	G	201	8Q1	C28-O27-P24-O3
49	G	201	8Q1	C28-O27-P24-O2
49	G	201	8Q1	C28-O27-P24-O1
49	X	201	8Q1	O4-C1-S44-C43
49	X	201	8Q1	C6-C1-S44-C43
49	X	201	8Q1	O27-C28-C29-C32
49	X	201	8Q1	C28-C29-C32-C34
49	X	201	8Q1	C28-C29-C32-O33
49	X	201	8Q1	C30-C29-C32-C34
49	X	201	8Q1	C30-C29-C32-O33
49	X	201	8Q1	C31-C29-C32-C34
49	X	201	8Q1	C31-C29-C32-O33
49	X	201	8Q1	N36-C37-C38-C39
49	X	201	8Q1	C42-C43-S44-C1
49	X	201	8Q1	C28-O27-P24-O3
49	X	201	8Q1	C28-O27-P24-O2
49	X	201	8Q1	C28-O27-P24-O1
50	I	201	CDL	O1-C1-CA2-OA2
50	I	201	CDL	O1-C1-CB2-OB2

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Mol	Chain	Res	Type	Atoms
50	I	201	CDL	CA2-OA2-PA1-OA4
50	I	201	CDL	OA5-CA3-CA4-OA6
50	I	201	CDL	CB2-OB2-PB2-OB3
50	I	201	CDL	CB2-OB2-PB2-OB4
50	I	201	CDL	CB2-OB2-PB2-OB5
50	I	201	CDL	CB3-OB5-PB2-OB3
50	a	201	CDL	CA2-OA2-PA1-OA3
50	a	201	CDL	CA2-OA2-PA1-OA4
50	a	201	CDL	CA2-OA2-PA1-OA5
50	a	201	CDL	CB3-OB5-PB2-OB3
50	g	202	CDL	CA2-OA2-PA1-OA3
50	g	202	CDL	CA2-OA2-PA1-OA4
50	g	202	CDL	CA3-OA5-PA1-OA3
50	g	202	CDL	CA3-OA5-PA1-OA4
50	g	202	CDL	OA6-CA4-CA6-OA8
50	g	202	CDL	CB3-OB5-PB2-OB3
50	i	401	CDL	CA2-OA2-PA1-OA4
50	i	401	CDL	CB2-OB2-PB2-OB3
50	i	401	CDL	CB2-OB2-PB2-OB4
51	J	401	NDP	C5B-O5B-PA-O3
51	J	401	NDP	C2N-C3N-C7N-N7N
54	U	101	PEE	C1-O3P-P-O2P
54	U	101	PEE	C1-O3P-P-O1P
54	b	201	PEE	C1-O3P-P-O1P
54	i	402	PEE	C1-O3P-P-O2P
54	i	402	PEE	C1-O3P-P-O1P
54	i	402	PEE	C4-O4P-P-O2P
54	j	201	PEE	C11-C10-O2-C2
54	j	201	PEE	C1-O3P-P-O2P
54	j	201	PEE	C1-O3P-P-O1P
54	l	701	PEE	C11-C10-O2-C2
54	l	701	PEE	C4-O4P-P-O3P
54	l	701	PEE	C4-O4P-P-O2P
54	l	701	PEE	C4-O4P-P-O1P
54	m	201	PEE	C11-C10-O2-C2
54	m	201	PEE	O4P-C4-C5-N
54	r	501	PEE	C1-O3P-P-O2P
54	r	501	PEE	C1-O3P-P-O1P
54	r	501	PEE	C1-O3P-P-O4P
54	r	501	PEE	C4-O4P-P-O3P
54	r	501	PEE	C4-O4P-P-O2P
54	r	501	PEE	C4-O4P-P-O1P

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Mol	Chain	Res	Type	Atoms
56	s	401	UQ	C7-C8-C9-C10
56	s	401	UQ	C7-C8-C9-C11
56	s	401	UQ	C12-C11-C9-C8
56	s	401	UQ	C12-C11-C9-C10
56	s	401	UQ	C9-C11-C12-C13
56	s	401	UQ	C12-C13-C14-C16
56	s	401	UQ	C14-C16-C17-C18
57	w	401	ADP	C5'-O5'-PA-O3A
50	i	401	CDL	OA9-CA7-OA8-CA6
50	i	401	CDL	C31-CA7-OA8-CA6
56	s	401	UQ	C17-C18-C19-C21
54	b	201	PEE	O5-C30-O3-C3
54	i	402	PEE	O4-C10-O2-C2
54	j	201	PEE	O4-C10-O2-C2
54	l	701	PEE	O4-C10-O2-C2
54	m	201	PEE	O4-C10-O2-C2
54	i	402	PEE	C11-C10-O2-C2
50	g	202	CDL	OB9-CB7-OB8-CB6
48	C	302	PLX	C28-C29-C30-C31
54	b	201	PEE	C31-C30-O3-C3
54	l	701	PEE	C31-C30-O3-C3
54	Q	501	PEE	C17-C18-C19-C20
54	Q	501	PEE	C37-C38-C39-C40
54	U	101	PEE	C17-C18-C19-C20
54	b	201	PEE	C37-C38-C39-C40
54	r	501	PEE	C17-C18-C19-C20
54	m	201	PEE	O5-C30-O3-C3
50	g	202	CDL	O1-C1-CA2-OA2
50	g	202	CDL	C71-CB7-OB8-CB6
54	l	701	PEE	O5-C30-O3-C3
51	J	401	NDP	C2D-C1D-N1N-C6N
48	j	202	PLX	C28-C29-C30-C31
48	r	502	PLX	C12-C13-C14-C15
50	i	401	CDL	C31-C32-C33-C34
51	J	401	NDP	O4B-C4B-C5B-O5B
54	m	201	PEE	C31-C30-O3-C3
56	s	401	UQ	C13-C14-C16-C17
48	g	201	PLX	C7-C8-C9-C10
50	I	201	CDL	CB2-C1-CA2-OA2
50	I	201	CDL	CA2-C1-CB2-OB2
50	g	202	CDL	CB2-C1-CA2-OA2
50	i	401	CDL	C71-CB7-OB8-CB6

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Mol	Chain	Res	Type	Atoms
50	g	202	CDL	C74-C75-C76-C77
50	i	401	CDL	OB9-CB7-OB8-CB6
48	j	202	PLX	C15-C16-C17-C18
54	U	101	PEE	C31-C30-O3-C3
50	I	201	CDL	CA7-C31-C32-C33
50	g	202	CDL	C83-C84-C85-C86
50	g	202	CDL	CB5-C51-C52-C53
50	g	202	CDL	CB7-C71-C72-C73
50	i	401	CDL	CA7-C31-C32-C33
50	i	401	CDL	CB7-C71-C72-C73
51	J	401	NDP	C3B-C4B-C5B-O5B
50	a	201	CDL	C31-C32-C33-C34
50	I	201	CDL	CB7-C71-C72-C73
54	r	501	PEE	C10-C11-C12-C13
54	Q	501	PEE	C12-C13-C14-C15
50	i	401	CDL	O1-C1-CA2-OA2
50	g	202	CDL	CA7-C31-C32-C33
54	i	402	PEE	C17-C18-C19-C20
54	U	101	PEE	O5-C30-O3-C3
50	g	202	CDL	C51-CB5-OB6-CB4
54	U	101	PEE	C11-C10-O2-C2
48	C	302	PLX	C3-O4-P1-O1
48	a	202	PLX	C3-O4-P1-O1
48	j	202	PLX	C3-O4-P1-O1
48	r	502	PLX	C3-O4-P1-O1
50	I	201	CDL	CA2-OA2-PA1-OA5
50	I	201	CDL	CB3-OB5-PB2-OB2
50	a	201	CDL	CA3-OA5-PA1-OA2
50	g	202	CDL	CA2-OA2-PA1-OA5
50	g	202	CDL	CA3-OA5-PA1-OA2
50	g	202	CDL	CB2-OB2-PB2-OB5
50	g	202	CDL	CB3-OB5-PB2-OB2
50	i	401	CDL	CA2-OA2-PA1-OA5
50	i	401	CDL	CA3-OA5-PA1-OA2
50	i	401	CDL	CB2-OB2-PB2-OB5
54	U	101	PEE	C1-O3P-P-O4P
54	i	402	PEE	C1-O3P-P-O4P
54	i	402	PEE	C4-O4P-P-O3P
54	j	201	PEE	C1-O3P-P-O4P
54	m	201	PEE	C4-O4P-P-O3P
50	a	201	CDL	C71-CB7-OB8-CB6
50	g	202	CDL	C78-C79-C80-C81

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Mol	Chain	Res	Type	Atoms
50	g	202	CDL	CA5-C11-C12-C13
50	i	401	CDL	CB2-C1-CA2-OA2
54	U	101	PEE	O4-C10-O2-C2
48	C	302	PLX	O8-C24-C25-C26
54	l	701	PEE	C30-C31-C32-C33
48	g	201	PLX	C33-C34-C35-C36
48	g	201	PLX	C32-C33-C34-C35
50	i	401	CDL	C52-C53-C54-C55
49	X	201	8Q1	O27-C28-C29-C30
49	X	201	8Q1	O27-C28-C29-C31
48	C	302	PLX	C17-C18-C19-C20
48	j	202	PLX	C25-C26-C27-C28
50	a	201	CDL	C75-C76-C77-C78
50	g	202	CDL	C56-C57-C58-C59
50	i	401	CDL	C11-C12-C13-C14
54	Q	501	PEE	C22-C23-C24-C25
54	Q	501	PEE	C33-C34-C35-C36
54	m	201	PEE	C11-C12-C13-C14
50	g	202	CDL	OB7-CB5-OB6-CB4
50	I	201	CDL	CB5-C51-C52-C53
48	g	201	PLX	C9-C10-C11-C12
50	a	201	CDL	C11-C12-C13-C14
54	j	201	PEE	C37-C38-C39-C40
50	a	201	CDL	C37-C38-C39-C40
50	g	202	CDL	C71-C72-C73-C74
48	g	201	PLX	C10-C11-C12-C13
48	r	502	PLX	C13-C14-C15-C16
48	j	202	PLX	C12-C13-C14-C15
54	Q	501	PEE	C34-C35-C36-C37
50	a	201	CDL	OB9-CB7-OB8-CB6
48	g	201	PLX	C11-C10-C9-C8
50	g	202	CDL	C55-C56-C57-C58
50	i	401	CDL	C71-C72-C73-C74
50	a	201	CDL	CA7-C31-C32-C33
48	C	302	PLX	C25-C26-C27-C28
48	j	202	PLX	C7-C8-C9-C10
48	r	502	PLX	C14-C15-C16-C17
50	a	201	CDL	C73-C74-C75-C76
50	g	202	CDL	C17-C18-C19-C20
50	g	202	CDL	C73-C74-C75-C76
50	g	202	CDL	C75-C76-C77-C78
50	g	202	CDL	C82-C83-C84-C85

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Mol	Chain	Res	Type	Atoms
54	l	701	PEE	C23-C24-C25-C26
54	r	501	PEE	C31-C32-C33-C34
54	U	101	PEE	C43-C44-C45-C46
50	I	201	CDL	OB7-CB5-OB6-CB4
50	I	201	CDL	C51-CB5-OB6-CB4
48	C	302	PLX	C13-C14-C15-C16
48	r	502	PLX	C27-C28-C29-C30
49	G	201	8Q1	C11-C12-C13-C14
48	C	302	PLX	C33-C34-C35-C36
48	g	201	PLX	C27-C28-C29-C30
48	j	202	PLX	C10-C11-C12-C13
50	a	201	CDL	C17-C18-C19-C20
50	a	201	CDL	C32-C33-C34-C35
50	g	202	CDL	C81-C82-C83-C84
54	b	201	PEE	C12-C13-C14-C15
54	l	701	PEE	C31-C32-C33-C34
48	r	502	PLX	C2-C1-N1-C1A
48	g	201	PLX	C30-C31-C32-C33
50	I	201	CDL	C11-C12-C13-C14
50	g	202	CDL	C32-C33-C34-C35
54	j	201	PEE	C42-C43-C44-C45
48	C	302	PLX	C30-C31-C32-C33
48	j	202	PLX	C14-C15-C16-C17
50	i	401	CDL	C35-C36-C37-C38
48	a	202	PLX	C10-C11-C12-C13
49	G	201	8Q1	C7-C8-C9-C10
50	a	201	CDL	C21-C22-C23-C24
48	j	202	PLX	C13-C14-C15-C16
48	r	502	PLX	C25-C26-C27-C28
54	j	201	PEE	C13-C14-C15-C16
54	r	501	PEE	C12-C13-C14-C15
54	b	201	PEE	C17-C18-C19-C20
48	g	201	PLX	C28-C29-C30-C31
49	G	201	8Q1	C12-C13-C14-C15
54	j	201	PEE	C10-C11-C12-C13
48	j	202	PLX	C27-C28-C29-C30
54	r	501	PEE	C11-C10-O2-C2
48	C	302	PLX	O9-C24-C25-C26
48	a	202	PLX	O7-C6-C7-C8
50	g	202	CDL	C62-C63-C64-C65
54	U	101	PEE	C23-C24-C25-C26
54	b	201	PEE	C33-C34-C35-C36

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Mol	Chain	Res	Type	Atoms
48	C	302	PLX	C16-C17-C18-C19
50	i	401	CDL	C14-C15-C16-C17
48	g	201	PLX	C25-C26-C27-C28
48	r	502	PLX	C28-C29-C30-C31
54	r	501	PEE	O4-C10-O2-C2
54	i	402	PEE	C2-C1-O3P-P
50	g	202	CDL	C41-C42-C43-C44
50	i	401	CDL	C36-C37-C38-C39
54	i	402	PEE	C32-C33-C34-C35
48	r	502	PLX	C2-C1-N1-C1C
50	a	201	CDL	C71-C72-C73-C74
50	g	202	CDL	C43-C44-C45-C46
48	a	202	PLX	C7-C8-C9-C10
48	C	302	PLX	C15-C16-C17-C18
54	m	201	PEE	C33-C34-C35-C36
48	C	302	PLX	C14-C15-C16-C17
50	g	202	CDL	C59-C60-C61-C62
50	g	202	CDL	C20-C21-C22-C23
48	C	302	PLX	C7-C8-C9-C10
54	b	201	PEE	C31-C32-C33-C34
49	G	201	8Q1	N36-C37-C38-C39
48	j	202	PLX	C9-C10-C11-C12
54	Q	501	PEE	C11-C10-O2-C2
50	a	201	CDL	OA5-CA3-CA4-OA6
54	l	701	PEE	O3P-C1-C2-O2
48	j	202	PLX	C26-C27-C28-C29
50	a	201	CDL	C54-C55-C56-C57
50	g	202	CDL	C52-C53-C54-C55
50	g	202	CDL	OB6-CB4-CB6-OB8
48	g	201	PLX	C14-C15-C16-C17
54	i	402	PEE	C19-C20-C21-C22
54	i	402	PEE	C35-C36-C37-C38
54	m	201	PEE	C13-C14-C15-C16
54	i	402	PEE	C22-C23-C24-C25
50	g	202	CDL	C14-C15-C16-C17
54	Q	501	PEE	O4-C10-O2-C2
48	r	502	PLX	C10-C11-C12-C13
54	U	101	PEE	C36-C37-C38-C39
54	i	402	PEE	C18-C19-C20-C21
48	j	202	PLX	O4-C3-C4-C5
50	I	201	CDL	OA5-CA3-CA4-CA6
50	a	201	CDL	C52-C53-C54-C55

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Mol	Chain	Res	Type	Atoms
50	g	202	CDL	C11-C12-C13-C14
50	i	401	CDL	C32-C33-C34-C35
54	U	101	PEE	C34-C35-C36-C37
49	X	201	8Q1	C9-C10-C11-C12
48	r	502	PLX	C15-C16-C17-C18
48	C	302	PLX	C27-C28-C29-C30
48	r	502	PLX	C3-C4-C5-O8
50	g	202	CDL	CA3-CA4-CA6-OA8
50	g	202	CDL	C42-C43-C44-C45
50	g	202	CDL	CB3-CB4-CB6-OB8
54	b	201	PEE	C1-C2-C3-O3
54	i	402	PEE	C1-C2-C3-O3
54	j	201	PEE	C1-C2-C3-O3
54	j	201	PEE	C32-C33-C34-C35
48	r	502	PLX	C31-C32-C33-C34
50	g	202	CDL	C35-C36-C37-C38
54	U	101	PEE	C21-C22-C23-C24
48	C	302	PLX	C9-C10-C11-C12
48	r	502	PLX	C29-C30-C31-C32
54	i	402	PEE	C23-C24-C25-C26
54	r	501	PEE	C41-C42-C43-C44
48	C	302	PLX	O6-C6-C7-C8
48	r	502	PLX	O8-C24-C25-C26
48	r	502	PLX	C36-C37-C38-C39
54	Q	501	PEE	C10-C11-C12-C13
48	r	502	PLX	C9-C10-C11-C12
50	I	201	CDL	C52-C53-C54-C55
54	r	501	PEE	C40-C41-C42-C43
50	a	201	CDL	C35-C36-C37-C38
48	C	302	PLX	C31-C32-C33-C34
50	I	201	CDL	C31-CA7-OA8-CA6
48	r	502	PLX	C2-C1-N1-C1B
50	g	202	CDL	C60-C61-C62-C63
50	g	202	CDL	C64-C65-C66-C67
50	i	401	CDL	C74-C75-C76-C77
48	j	202	PLX	C33-C34-C35-C36
48	r	502	PLX	C30-C31-C32-C33
54	r	501	PEE	C11-C12-C13-C14
49	G	201	8Q1	C30-C29-C32-O33
49	X	201	8Q1	C7-C8-C9-C10
54	b	201	PEE	C11-C10-O2-C2
50	i	401	CDL	C73-C74-C75-C76

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Mol	Chain	Res	Type	Atoms
54	i	402	PEE	C24-C25-C26-C27
54	l	701	PEE	C24-C25-C26-C27
54	r	501	PEE	C36-C37-C38-C39
50	I	201	CDL	OB5-CB3-CB4-CB6
50	a	201	CDL	OA5-CA3-CA4-CA6
54	l	701	PEE	O3P-C1-C2-C3
49	G	201	8Q1	C11-C10-C9-C8
54	U	101	PEE	C32-C33-C34-C35
48	r	502	PLX	C7-C8-C9-C10
54	j	201	PEE	C31-C30-O3-C3
48	r	502	PLX	C33-C34-C35-C36
50	I	201	CDL	C71-CB7-OB8-CB6
54	r	501	PEE	C1-C2-C3-O3
48	r	502	PLX	C26-C27-C28-C29
48	a	202	PLX	C11-C12-C13-C14
48	j	202	PLX	C34-C35-C36-C37
48	r	502	PLX	C11-C12-C13-C14
48	C	302	PLX	O7-C6-C7-C8
48	C	302	PLX	O4-C3-C4-O6
48	j	202	PLX	O4-C3-C4-O6
50	I	201	CDL	OB5-CB3-CB4-OB6
54	Q	501	PEE	O3P-C1-C2-O2
50	I	201	CDL	OA9-CA7-OA8-CA6
48	j	202	PLX	O6-C4-C5-O8
48	r	502	PLX	O6-C4-C5-O8
50	i	401	CDL	OB6-CB4-CB6-OB8
54	U	101	PEE	O2-C2-C3-O3
54	b	201	PEE	O2-C2-C3-O3
54	i	402	PEE	O2-C2-C3-O3
50	I	201	CDL	C11-CA5-OA6-CA4
54	b	201	PEE	C22-C23-C24-C25
54	b	201	PEE	O4-C10-O2-C2
48	j	202	PLX	C30-C31-C32-C33
50	g	202	CDL	C72-C73-C74-C75
54	U	101	PEE	C38-C39-C40-C41
54	m	201	PEE	C10-C11-C12-C13
47	A	503	NAI	C2D-C1D-N1N-C2N
54	U	101	PEE	C41-C42-C43-C44
48	C	302	PLX	O4-C3-C4-C5
54	Q	501	PEE	O3P-C1-C2-C3
50	a	201	CDL	C60-C61-C62-C63
54	l	701	PEE	C33-C34-C35-C36

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Mol	Chain	Res	Type	Atoms
51	J	401	NDP	O4D-C4D-C5D-O5D
48	g	201	PLX	C12-C13-C14-C15
54	Q	501	PEE	C15-C16-C17-C18
48	j	202	PLX	C3-C4-C5-O8
50	I	201	CDL	CA3-CA4-CA6-OA8
54	U	101	PEE	C1-C2-C3-O3
54	b	201	PEE	C32-C33-C34-C35
48	g	201	PLX	C36-C37-C38-C39
50	I	201	CDL	OA7-CA5-OA6-CA4
49	G	201	8Q1	C30-C29-C32-C34
50	I	201	CDL	OB9-CB7-OB8-CB6
50	i	401	CDL	C15-C16-C17-C18
50	I	201	CDL	OA6-CA4-CA6-OA8
54	j	201	PEE	O2-C2-C3-O3
54	j	201	PEE	O5-C30-O3-C3
49	X	201	8Q1	C12-C13-C14-C15
50	i	401	CDL	C75-C76-C77-C78
54	Q	501	PEE	C19-C20-C21-C22
54	b	201	PEE	C13-C14-C15-C16
48	a	202	PLX	C11-C10-C9-C8
48	g	201	PLX	C3-O4-P1-O1
50	a	201	CDL	CB3-OB5-PB2-OB2
54	l	701	PEE	C14-C15-C16-C17
48	C	302	PLX	C3-O4-P1-O3
48	a	202	PLX	C3-O4-P1-O2
48	j	202	PLX	C3-O4-P1-O2
48	j	202	PLX	C2-O1-P1-O3
50	I	201	CDL	CB3-OB5-PB2-OB4
50	a	201	CDL	CA3-OA5-PA1-OA4
50	a	201	CDL	CB2-OB2-PB2-OB4
50	g	202	CDL	CB2-OB2-PB2-OB3
50	g	202	CDL	CB2-OB2-PB2-OB4
50	i	401	CDL	CA3-OA5-PA1-OA4
51	J	401	NDP	C5B-O5B-PA-O1A
51	J	401	NDP	C5B-O5B-PA-O2A
54	U	101	PEE	C4-O4P-P-O2P
54	U	101	PEE	C4-O4P-P-O1P
54	m	201	PEE	C4-O4P-P-O2P
54	m	201	PEE	C4-O4P-P-O1P
57	w	401	ADP	C5'-O5'-PA-O2A
48	g	201	PLX	O4-C3-C4-C5
48	j	202	PLX	C25-C24-O8-C5

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Mol	Chain	Res	Type	Atoms
54	r	501	PEE	C31-C30-O3-C3
47	A	503	NAI	C3D-C4D-C5D-O5D
48	g	201	PLX	O4-C3-C4-O6
50	g	202	CDL	OB5-CB3-CB4-OB6
50	a	201	CDL	CB5-C51-C52-C53
54	b	201	PEE	C30-C31-C32-C33
54	i	402	PEE	C30-C31-C32-C33
51	J	401	NDP	C2N-C3N-C7N-O7N
54	l	701	PEE	C1-C2-C3-O3
50	i	401	CDL	OA6-CA4-CA6-OA8
54	l	701	PEE	O2-C2-C3-O3
54	r	501	PEE	O2-C2-C3-O3
50	I	201	CDL	C72-C73-C74-C75
54	i	402	PEE	C31-C30-O3-C3
54	r	501	PEE	C38-C39-C40-C41
50	g	202	CDL	CB4-CB3-OB5-PB2
48	g	201	PLX	O8-C24-C25-C26
54	i	402	PEE	O5-C30-O3-C3
54	r	501	PEE	O5-C30-O3-C3
48	g	201	PLX	O7-C6-C7-C8
48	g	201	PLX	O9-C24-C25-C26
48	j	202	PLX	O9-C24-C25-C26
54	U	101	PEE	C44-C45-C46-C47
54	b	201	PEE	C11-C12-C13-C14
48	r	502	PLX	C19-C20-C21-C22
54	m	201	PEE	C3-C2-O2-C10
50	g	202	CDL	C31-C32-C33-C34
48	a	202	PLX	O4-C3-C4-O6
47	A	503	NAI	O4D-C1D-N1N-C2N
54	Q	501	PEE	C30-C31-C32-C33
54	Q	501	PEE	C14-C15-C16-C17
50	g	202	CDL	C76-C77-C78-C79
54	r	501	PEE	C33-C34-C35-C36
54	j	201	PEE	C38-C39-C40-C41
54	U	101	PEE	C40-C41-C42-C43
48	a	202	PLX	C2-O1-P1-O4
50	i	401	CDL	CB3-OB5-PB2-OB2
54	U	101	PEE	C4-O4P-P-O3P
50	a	201	CDL	C55-C56-C57-C58
50	g	202	CDL	C23-C24-C25-C26
48	j	202	PLX	C31-C32-C33-C34
51	J	401	NDP	PN-O3-PA-O1A

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Mol	Chain	Res	Type	Atoms
54	i	402	PEE	C11-C12-C13-C14
54	l	701	PEE	C35-C36-C37-C38
54	l	701	PEE	C37-C38-C39-C40
54	b	201	PEE	C18-C19-C20-C21
48	C	302	PLX	C11-C10-C9-C8
50	i	401	CDL	C12-C13-C14-C15
54	Q	501	PEE	C38-C39-C40-C41
48	r	502	PLX	C16-C17-C18-C19
50	g	202	CDL	C80-C81-C82-C83
48	a	202	PLX	C34-C35-C36-C37
54	b	201	PEE	C39-C40-C41-C42
48	j	202	PLX	O6-C6-C7-C8
54	j	201	PEE	C20-C21-C22-C23
54	m	201	PEE	C16-C17-C18-C19
47	A	503	NAI	C2D-C1D-N1N-C6N
54	U	101	PEE	C22-C23-C24-C25
54	Q	501	PEE	C13-C14-C15-C16
50	a	201	CDL	C36-C37-C38-C39
54	l	701	PEE	C34-C35-C36-C37
54	b	201	PEE	C38-C39-C40-C41
54	l	701	PEE	C32-C33-C34-C35
48	C	302	PLX	C26-C27-C28-C29
54	l	701	PEE	C13-C14-C15-C16
54	l	701	PEE	C19-C20-C21-C22
50	g	202	CDL	OB5-CB3-CB4-CB6
50	i	401	CDL	O1-C1-CB2-OB2
49	G	201	8Q1	C42-C43-S44-C1
50	i	401	CDL	C72-C73-C74-C75
54	U	101	PEE	C37-C38-C39-C40
54	j	201	PEE	C17-C18-C19-C20
48	r	502	PLX	C18-C19-C20-C21
54	m	201	PEE	O3-C30-C31-C32
54	Q	501	PEE	O5-C30-O3-C3
48	j	202	PLX	C18-C19-C20-C21
48	g	201	PLX	C13-C14-C15-C16
54	Q	501	PEE	C16-C17-C18-C19
54	m	201	PEE	C18-C19-C20-C21
48	r	502	PLX	C24-C25-C26-C27
48	a	202	PLX	O6-C6-C7-C8
48	a	202	PLX	O4-C3-C4-C5
54	Q	501	PEE	C31-C30-O3-C3
54	b	201	PEE	O4P-C4-C5-N

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Mol	Chain	Res	Type	Atoms
54	j	201	PEE	O4P-C4-C5-N
54	j	201	PEE	C18-C19-C20-C21
50	a	201	CDL	C32-C31-CA7-OA8
50	a	201	CDL	CA2-C1-CB2-OB2
54	b	201	PEE	C34-C35-C36-C37
50	g	202	CDL	C52-C51-CB5-OB6
51	J	401	NDP	C3D-C4D-C5D-O5D
54	U	101	PEE	C16-C17-C18-C19
49	X	201	8Q1	O33-C32-C34-N36
50	I	201	CDL	C52-C51-CB5-OB6
48	g	201	PLX	C16-C17-C18-C19
54	b	201	PEE	C1-O3P-P-O4P
49	G	201	8Q1	O27-C28-C29-C30
50	a	201	CDL	C76-C77-C78-C79
54	U	101	PEE	O3-C30-C31-C32
54	j	201	PEE	O3-C30-C31-C32
54	i	402	PEE	C36-C37-C38-C39
54	i	402	PEE	C38-C39-C40-C41
54	l	701	PEE	C16-C17-C18-C19
47	A	503	NAI	O4D-C1D-N1N-C6N
54	l	701	PEE	C36-C37-C38-C39
50	i	401	CDL	CA3-CA4-CA6-OA8
50	i	401	CDL	CB3-CB4-CB6-OB8
48	C	302	PLX	C11-C12-C13-C14
48	r	502	PLX	O4-C3-C4-O6
50	g	202	CDL	C44-C45-C46-C47
54	b	201	PEE	C16-C17-C18-C19
50	I	201	CDL	C12-C11-CA5-OA6
54	r	501	PEE	C43-C44-C45-C46
50	a	201	CDL	OB6-CB4-CB6-OB8
50	g	202	CDL	C54-C55-C56-C57
54	Q	501	PEE	C18-C19-C20-C21
54	U	101	PEE	O2-C10-C11-C12
50	a	201	CDL	C18-C19-C20-C21
54	b	201	PEE	C23-C24-C25-C26
57	w	401	ADP	PB-O3A-PA-O2A
54	r	501	PEE	C24-C25-C26-C27
50	g	202	CDL	C31-CA7-OA8-CA6
48	C	302	PLX	C18-C19-C20-C21
54	U	101	PEE	O5-C30-C31-C32
50	g	202	CDL	C52-C51-CB5-OB7
54	m	201	PEE	C31-C32-C33-C34

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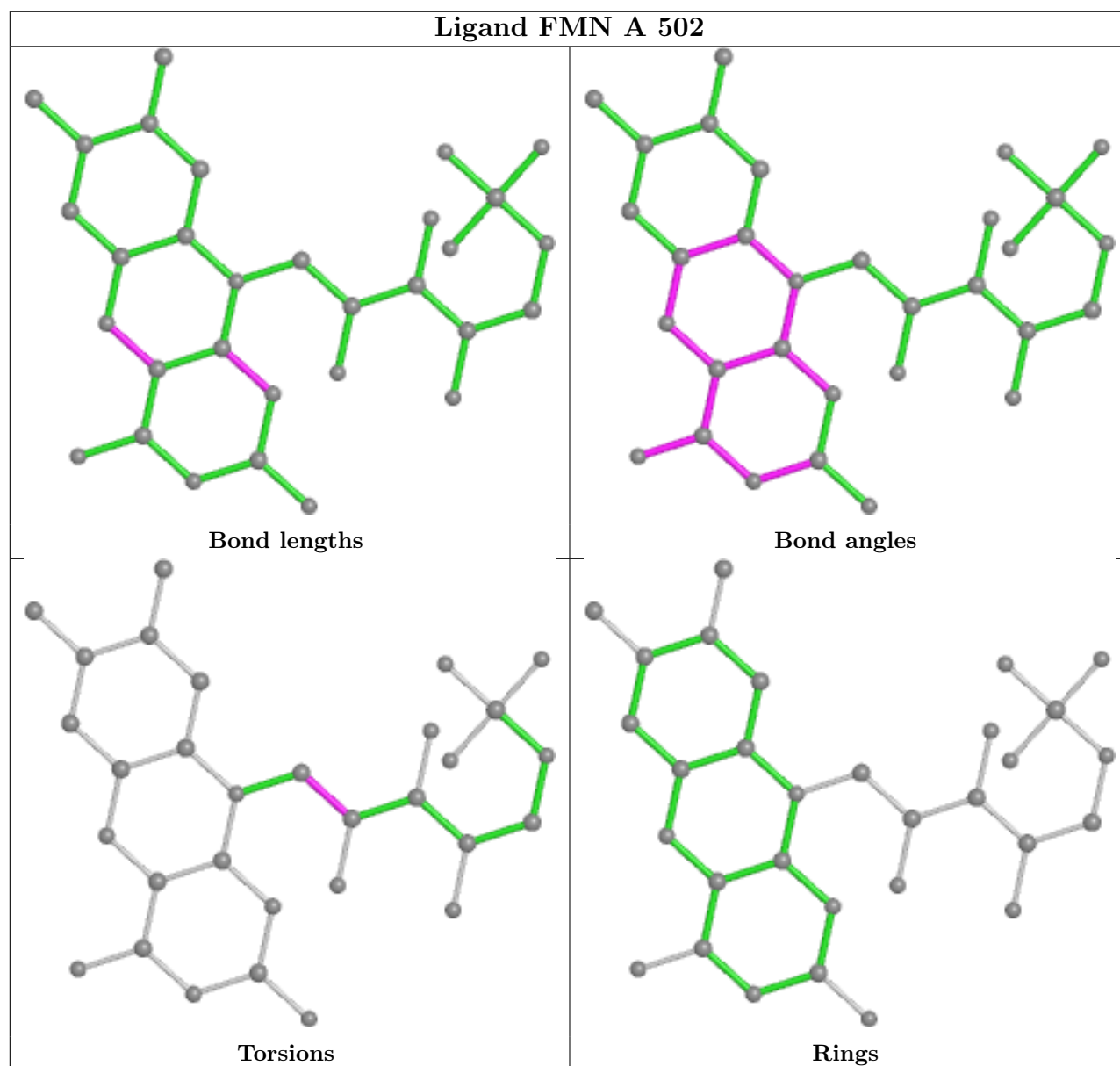
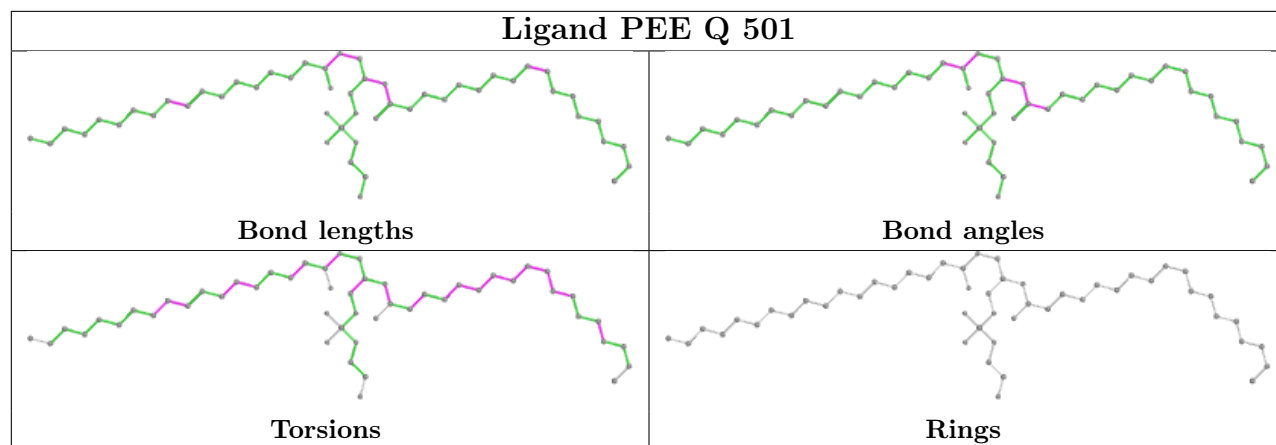
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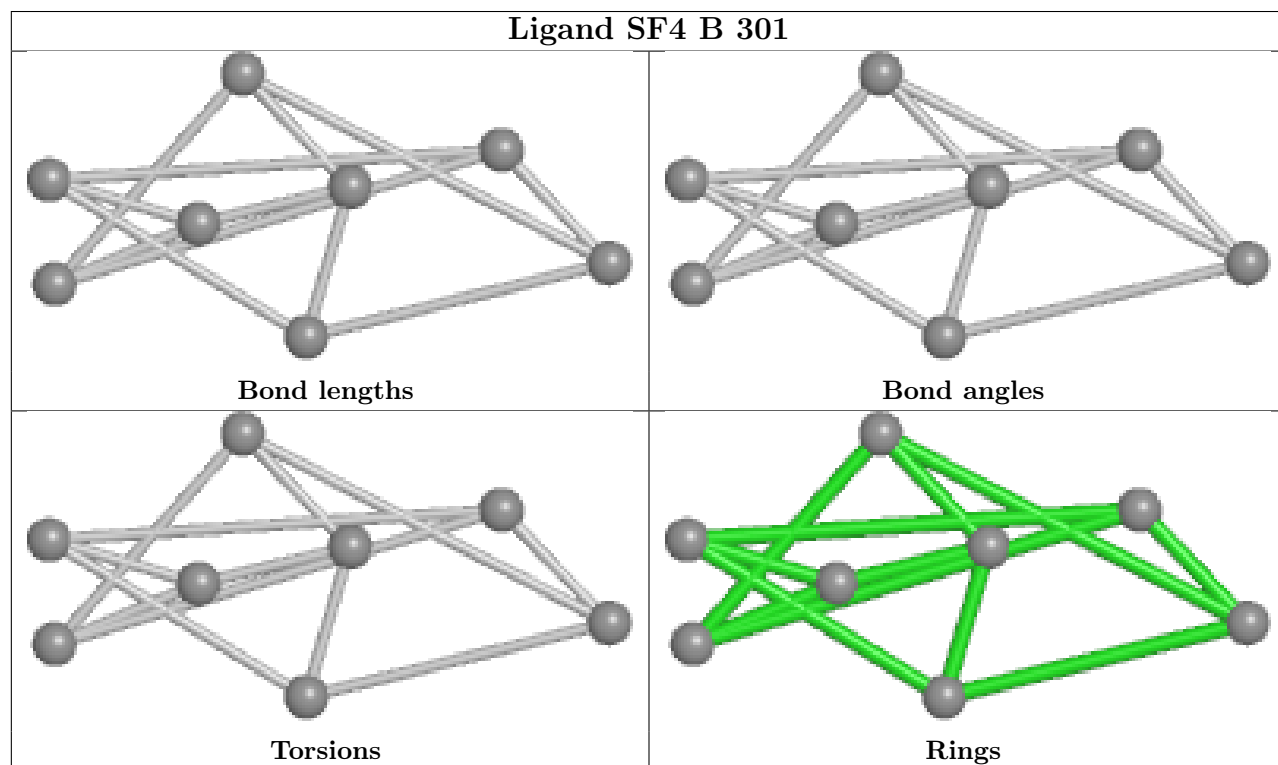
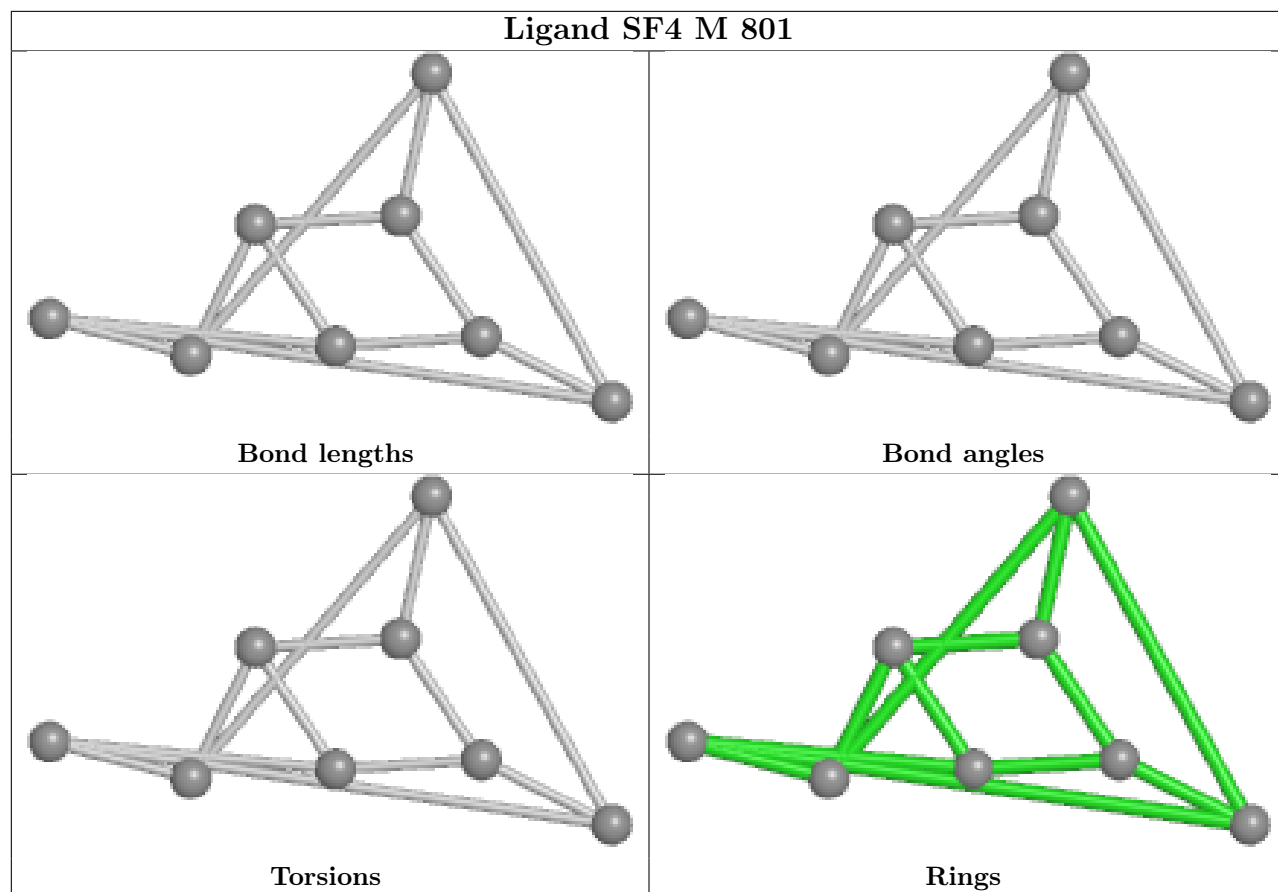
Mol	Chain	Res	Type	Atoms
50	a	201	CDL	CB3-CB4-CB6-OB8
54	j	201	PEE	C11-C12-C13-C14
48	C	302	PLX	C36-C37-C38-C39
50	I	201	CDL	C72-C71-CB7-OB8
54	r	501	PEE	C34-C35-C36-C37
50	I	201	CDL	C12-C11-CA5-OA7
54	r	501	PEE	C20-C21-C22-C23
50	I	201	CDL	C31-C32-C33-C34
50	g	202	CDL	C36-C37-C38-C39
48	a	202	PLX	C2-O1-P1-O2
50	I	201	CDL	CA3-OA5-PA1-OA3
50	i	401	CDL	CB3-OB5-PB2-OB3
54	m	201	PEE	C1-O3P-P-O1P
57	w	401	ADP	C5'-O5'-PA-O1A
50	I	201	CDL	C52-C51-CB5-OB7
54	j	201	PEE	O5-C30-C31-C32
54	i	402	PEE	C31-C32-C33-C34
54	U	101	PEE	O4-C10-C11-C12
48	g	201	PLX	C25-C24-O8-C5
54	b	201	PEE	C5-C4-O4P-P
50	a	201	CDL	OA9-CA7-OA8-CA6
50	g	202	CDL	OA9-CA7-OA8-CA6
48	j	202	PLX	C32-C33-C34-C35
50	I	201	CDL	C72-C71-CB7-OB9

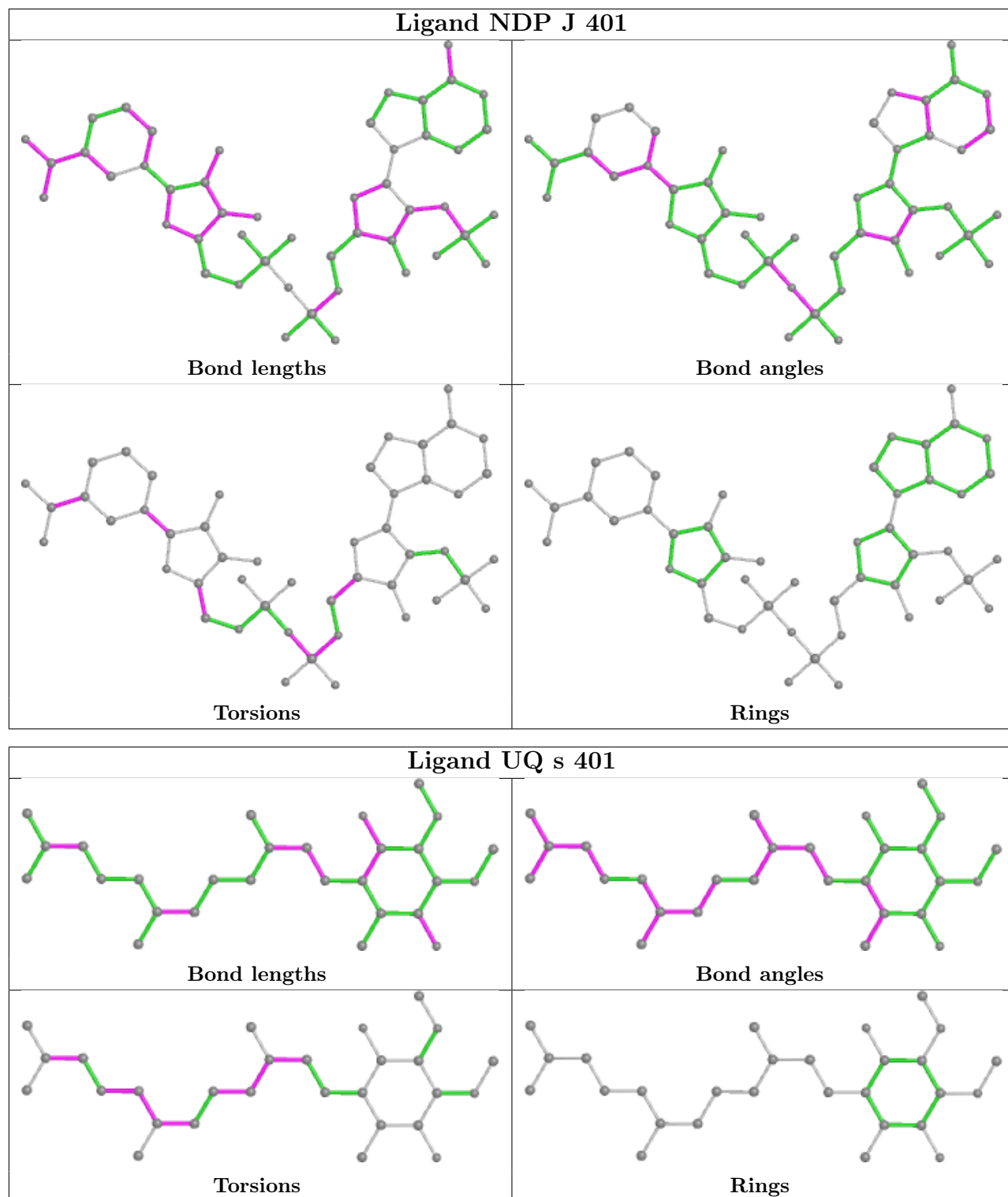
There are no ring outliers.

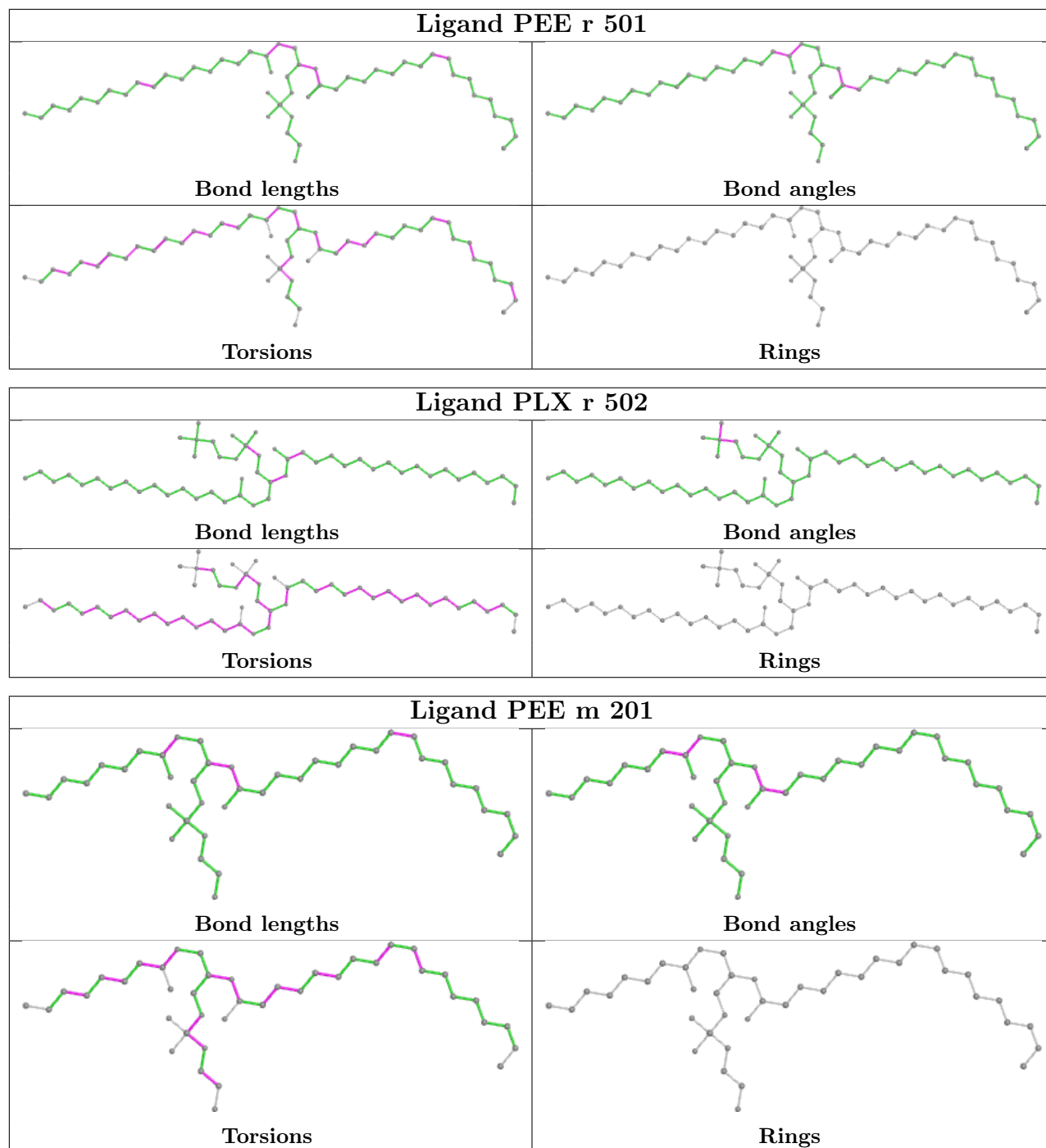
No monomer is involved in short contacts.

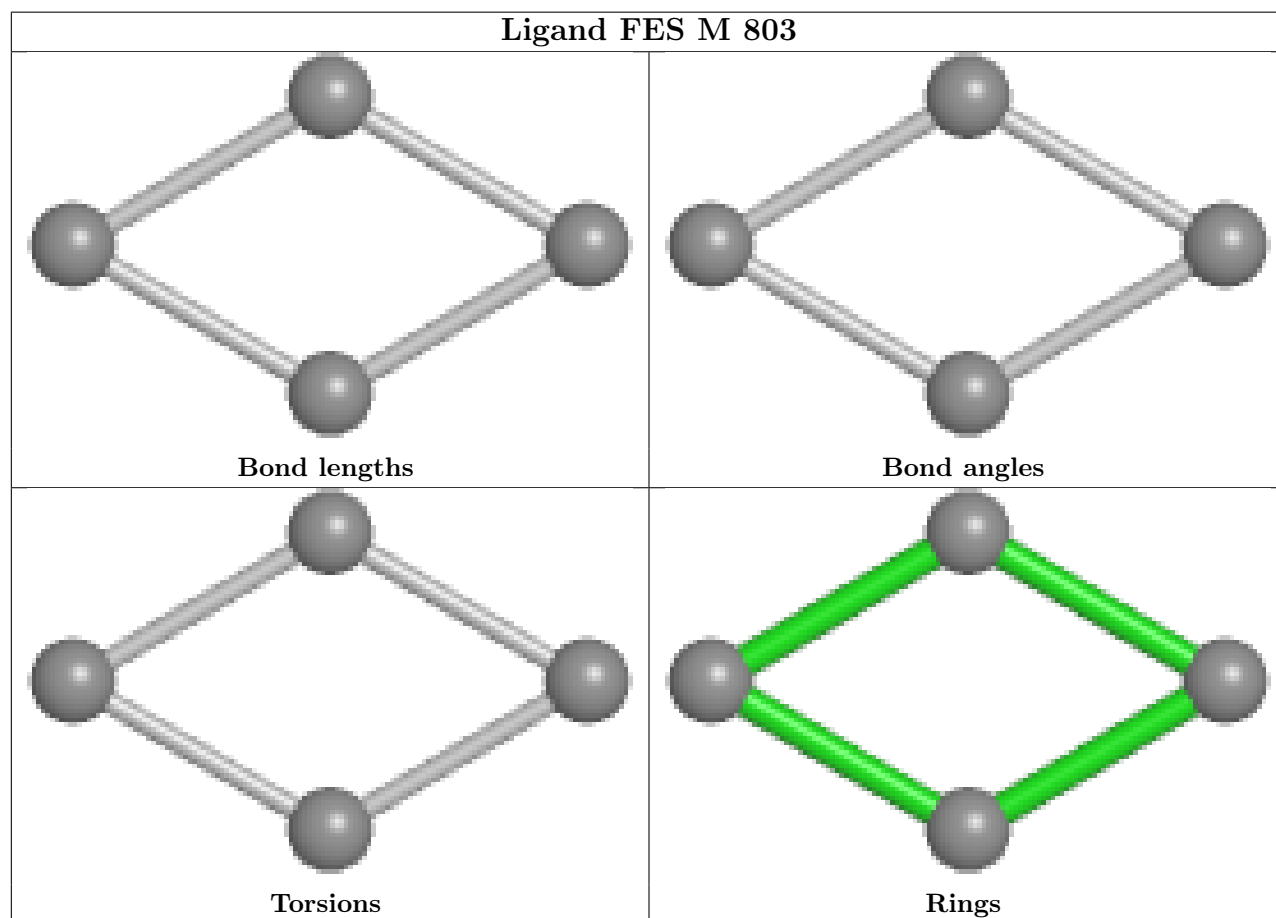
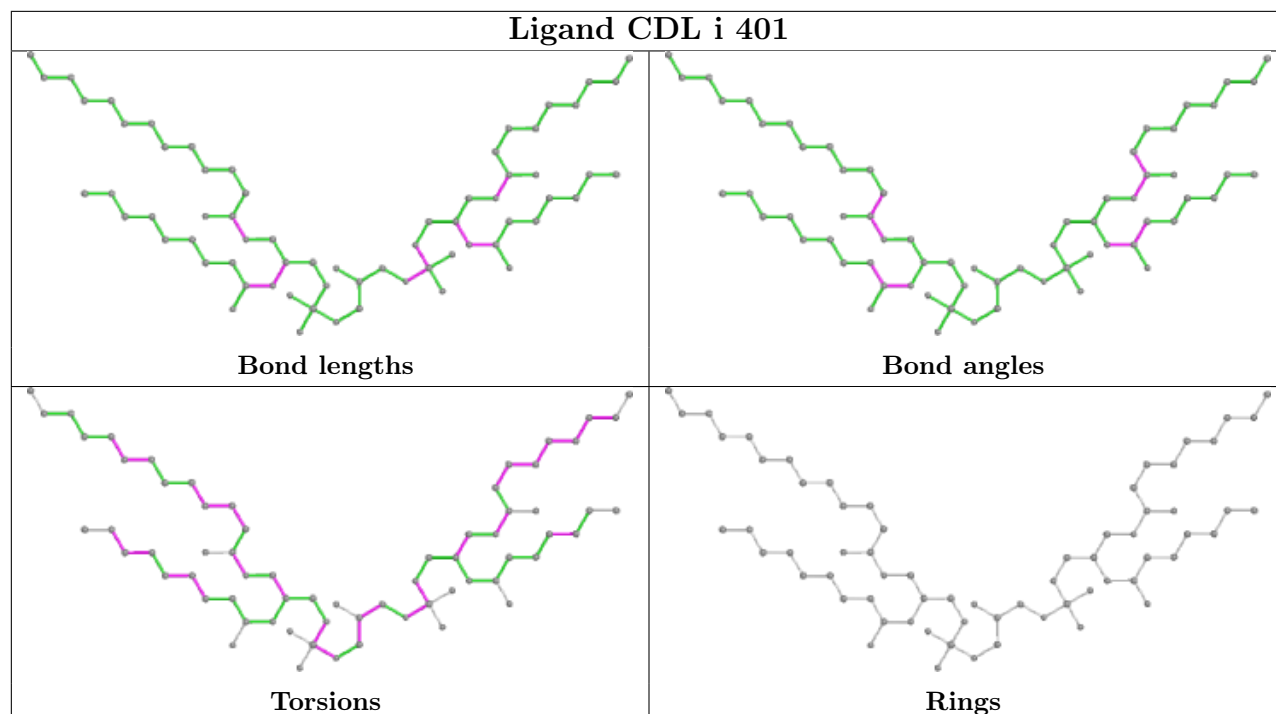
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

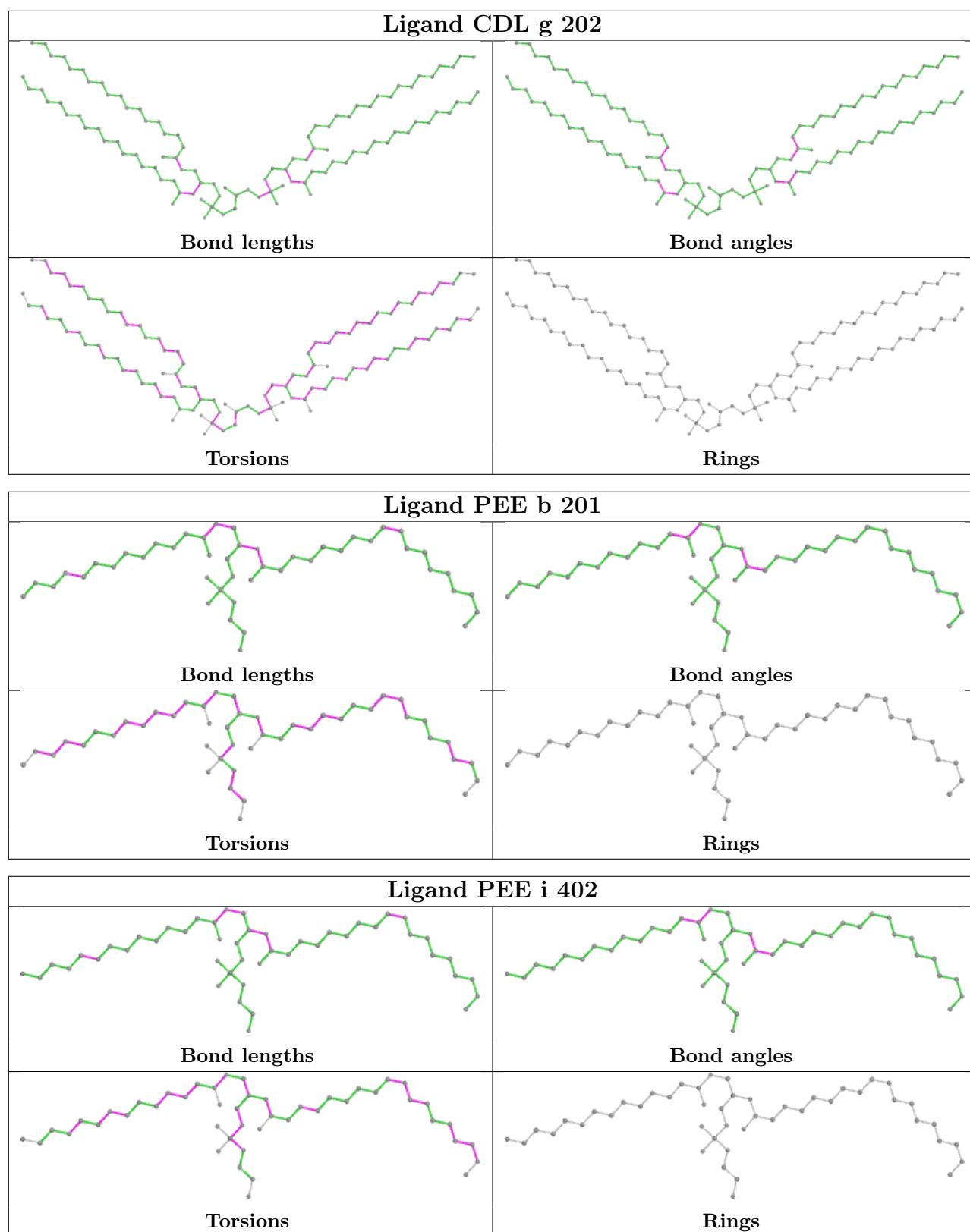


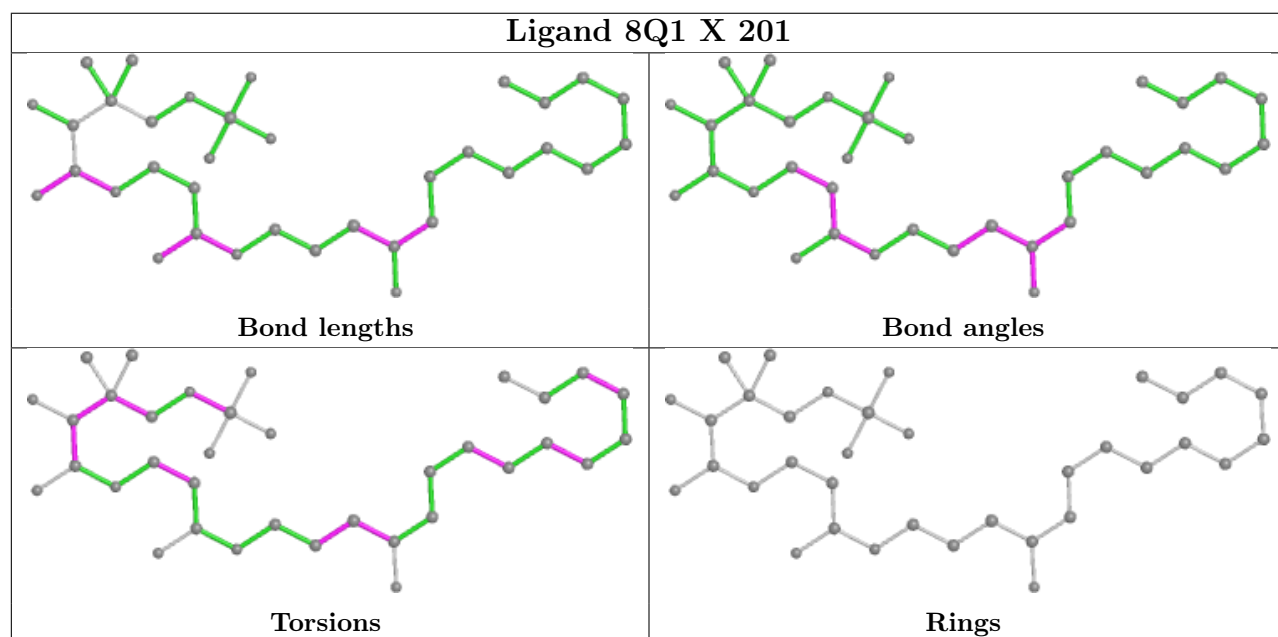
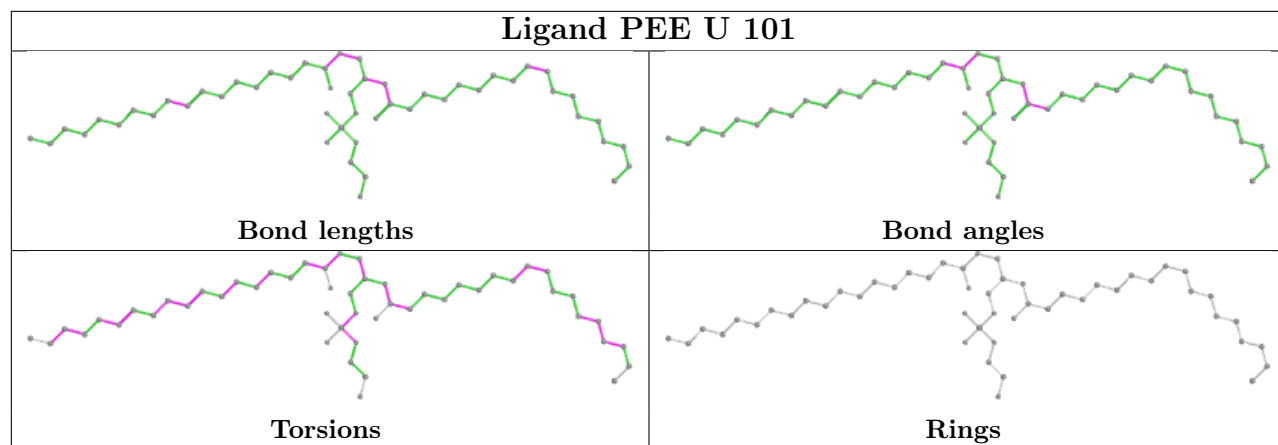


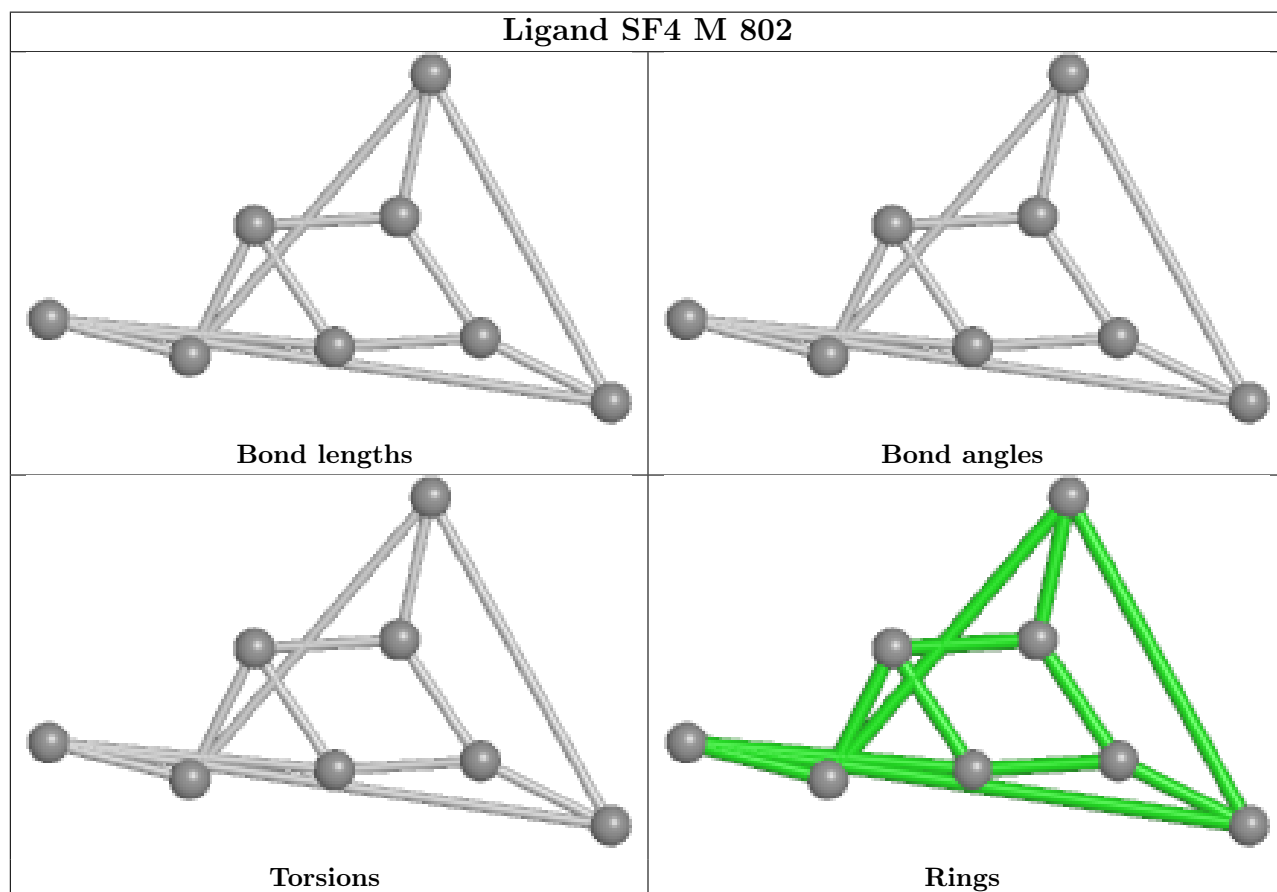
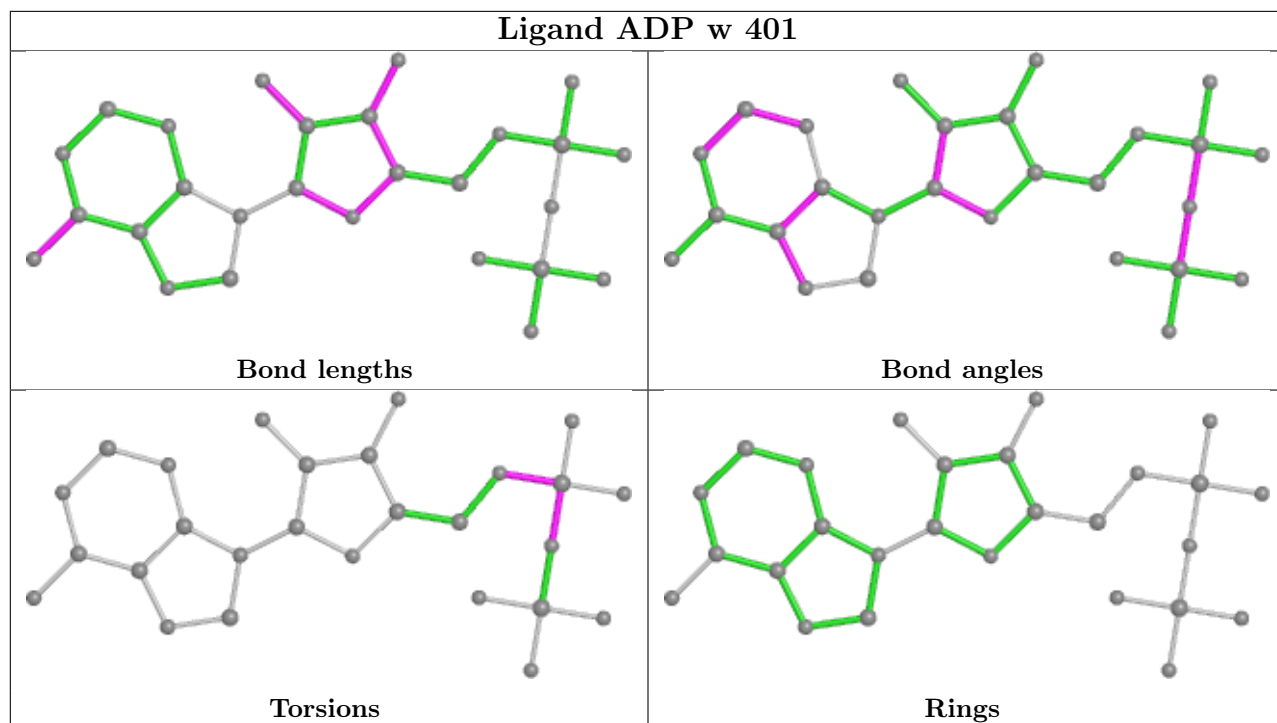


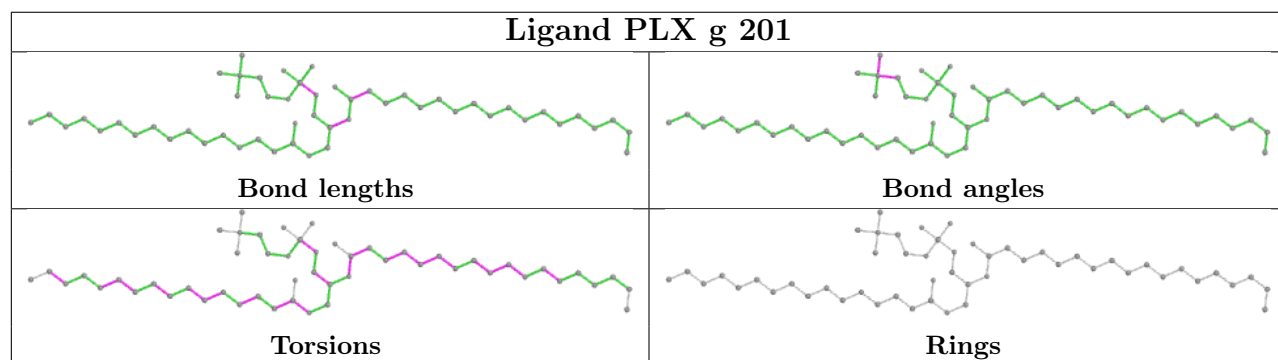
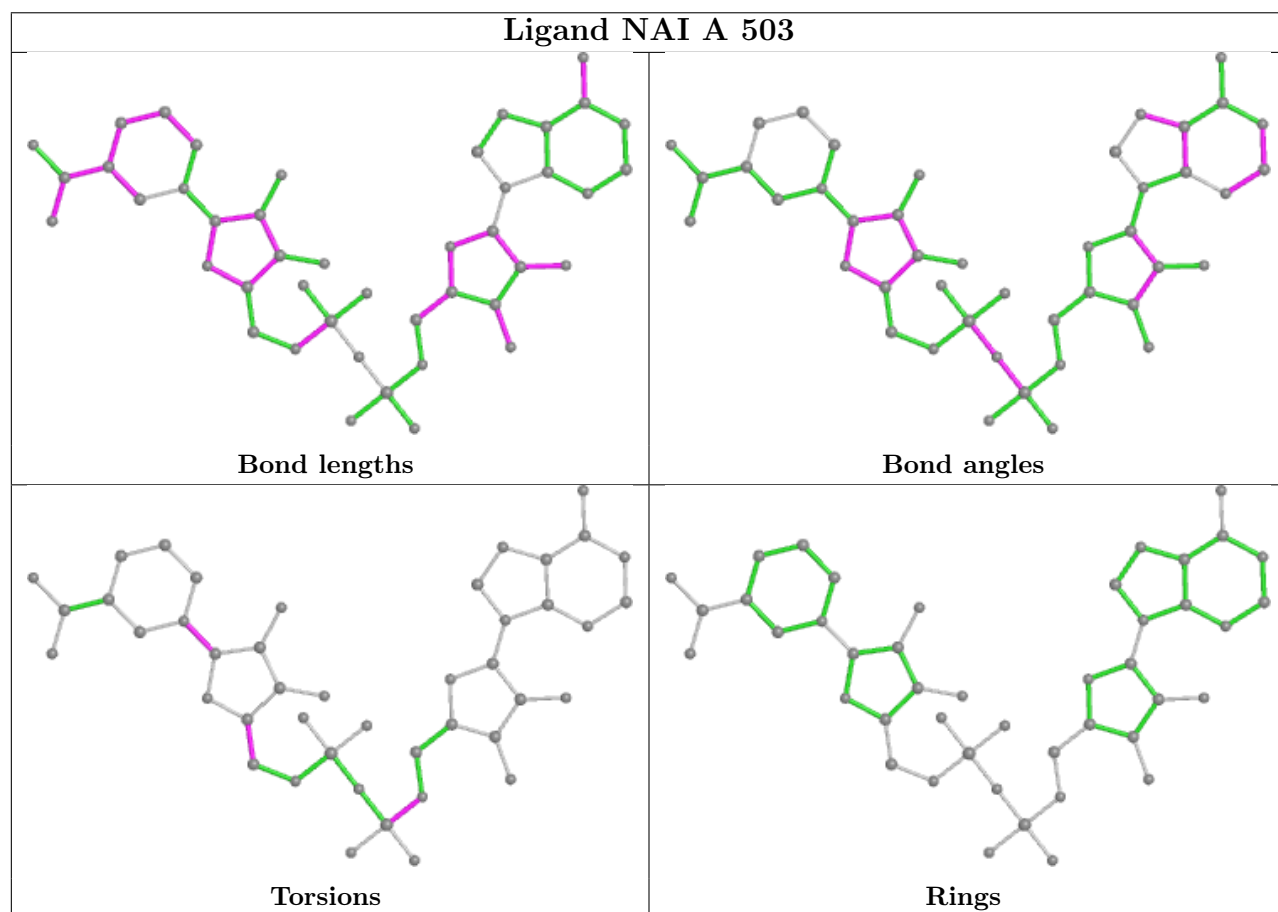
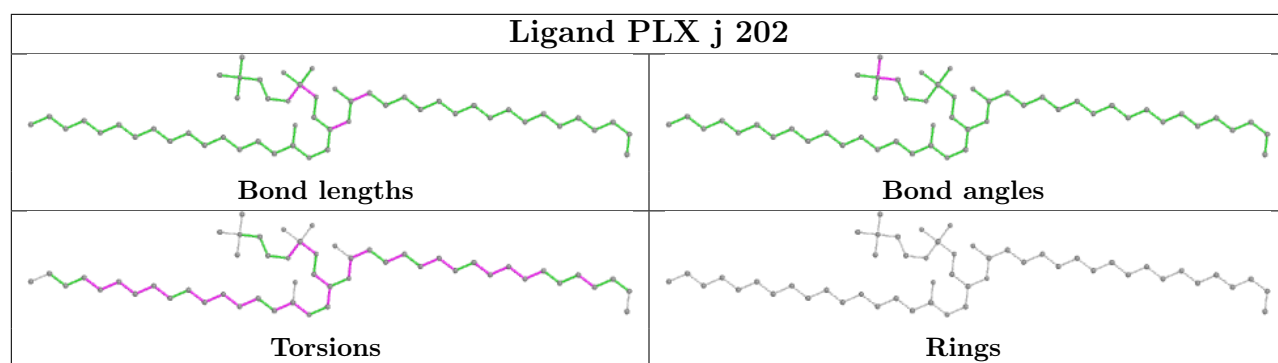


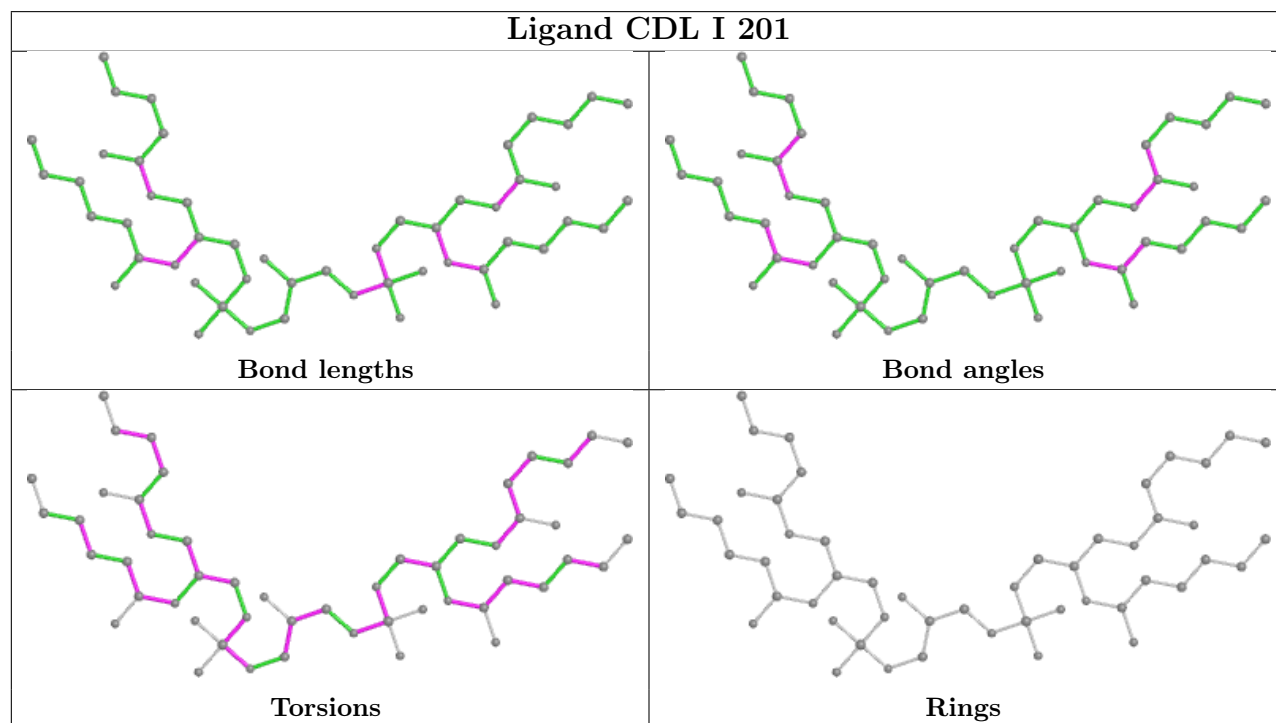
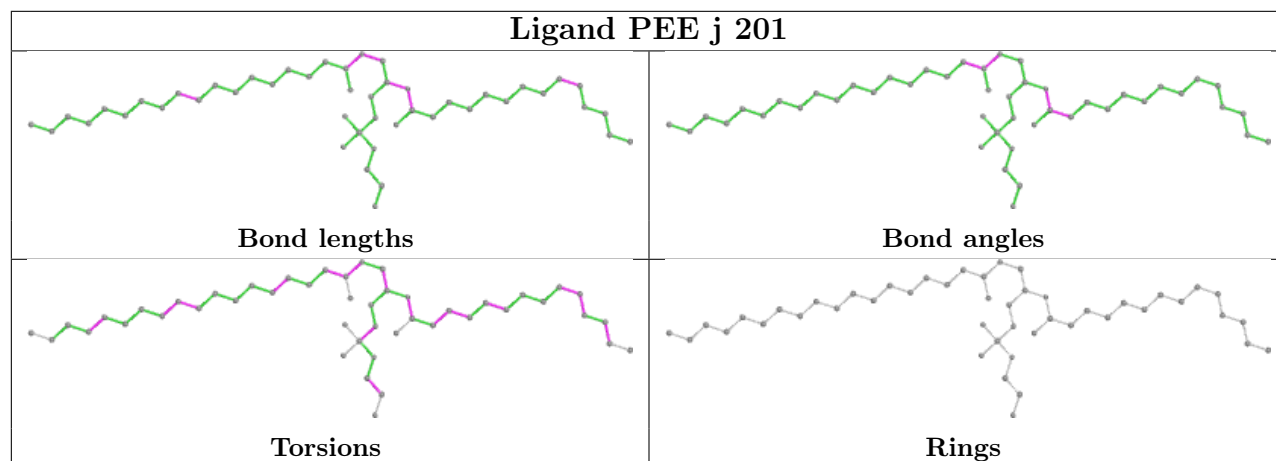
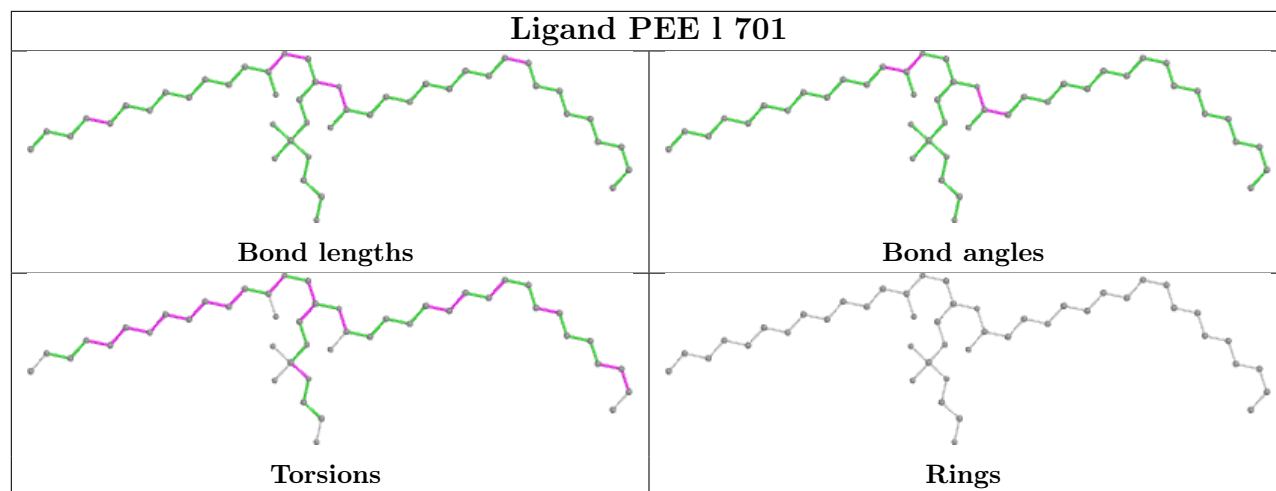


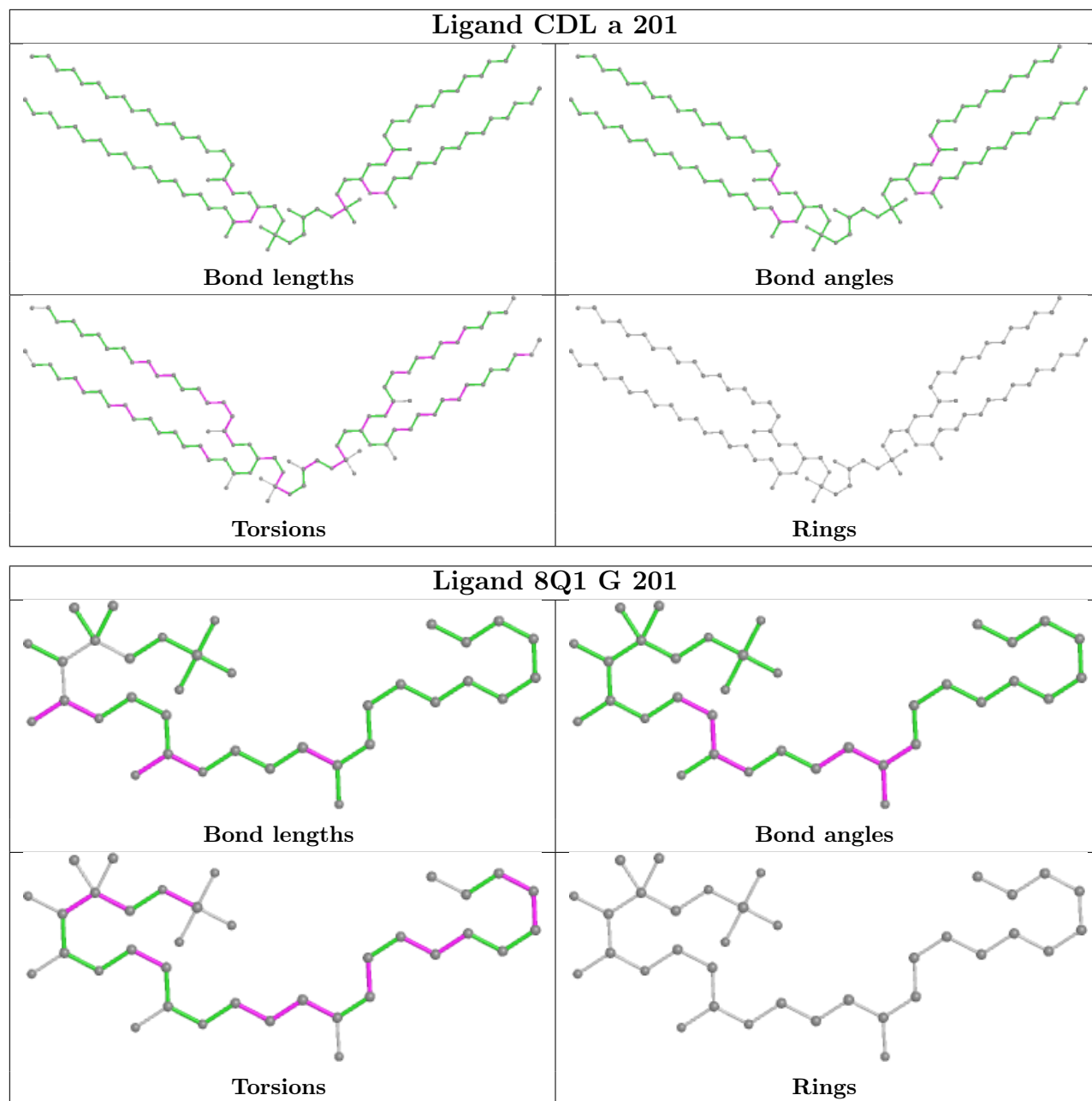


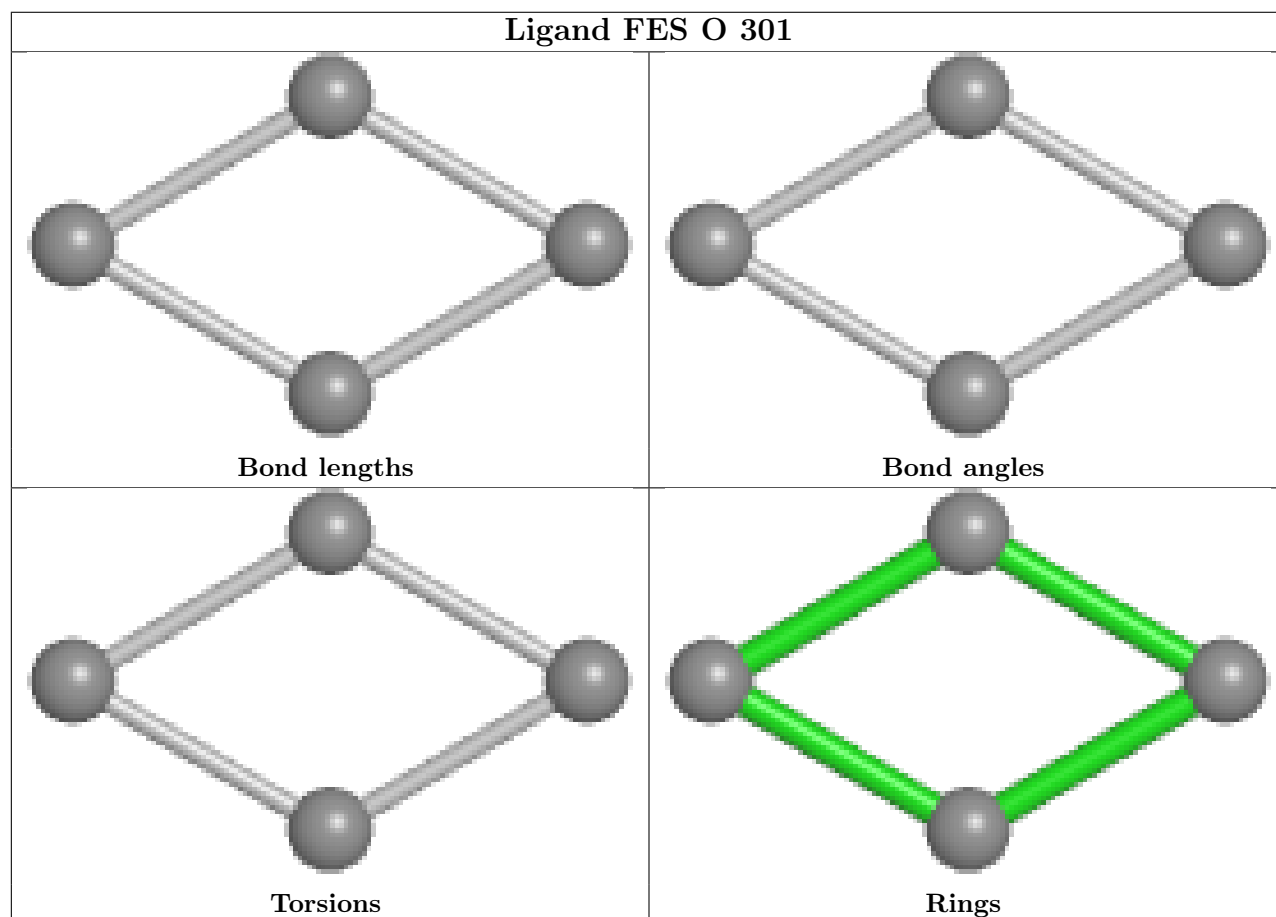
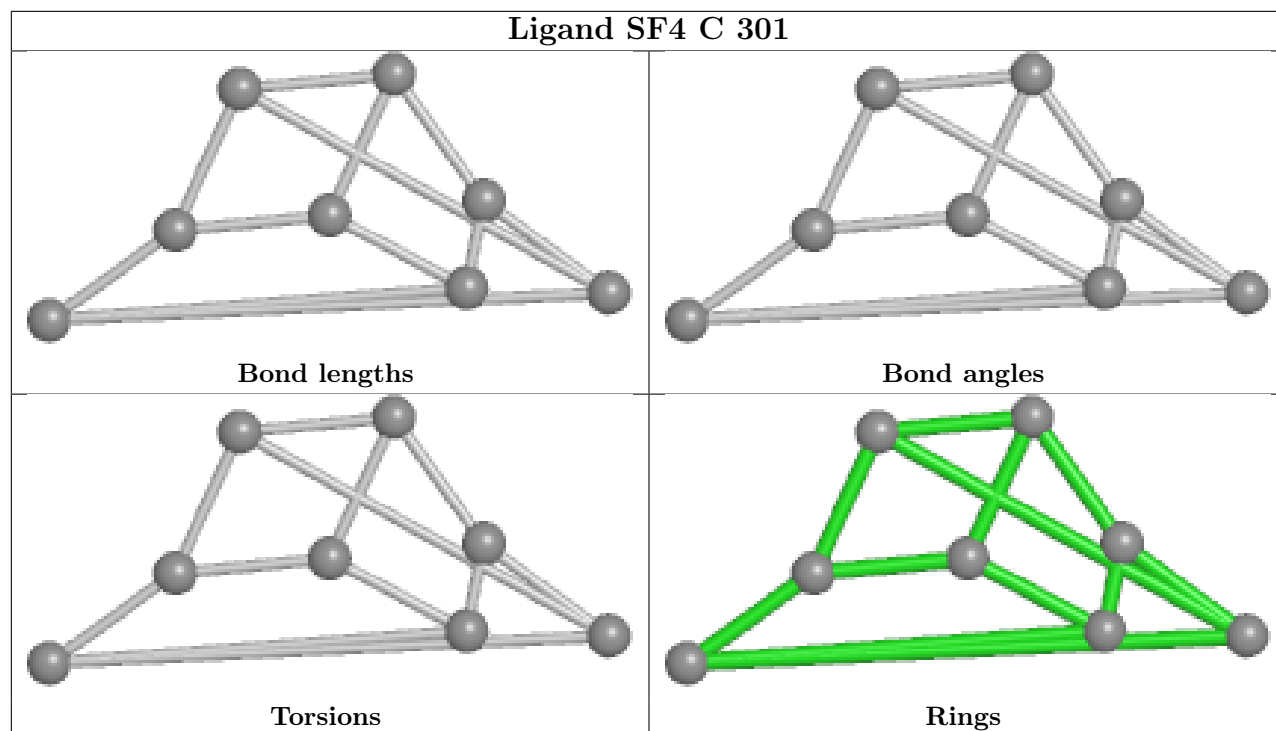


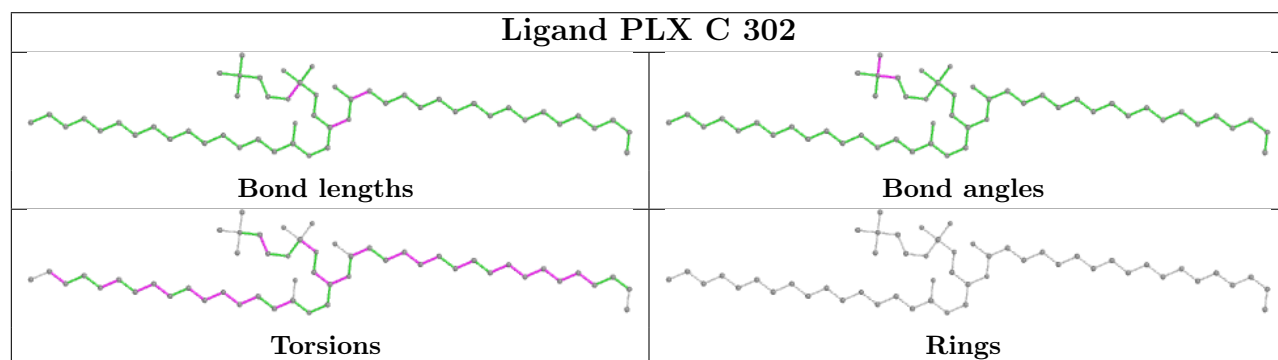
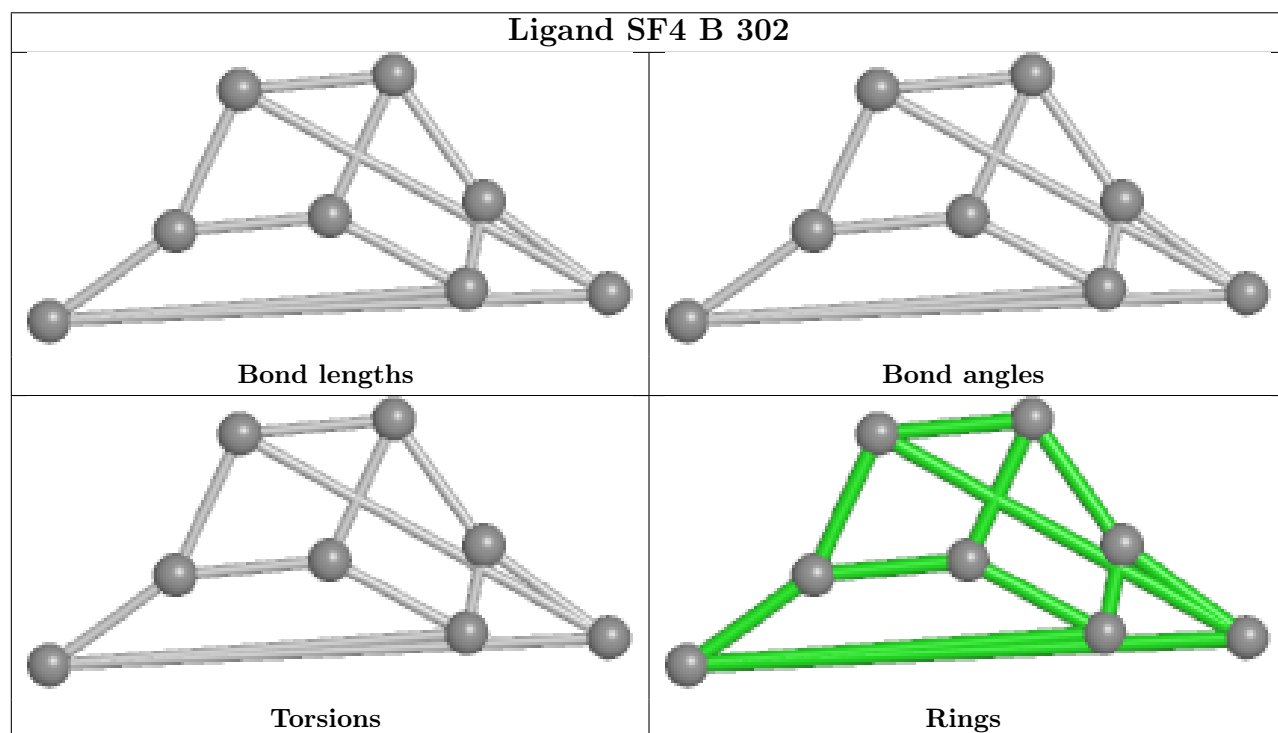
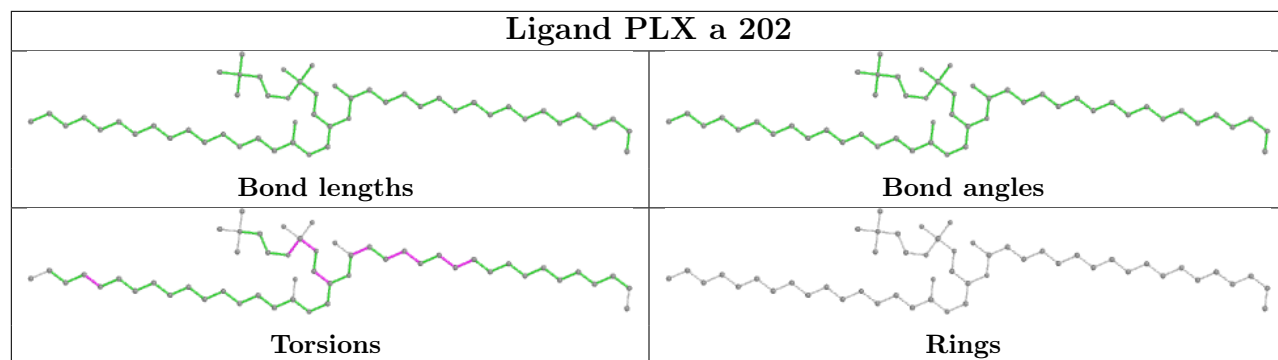


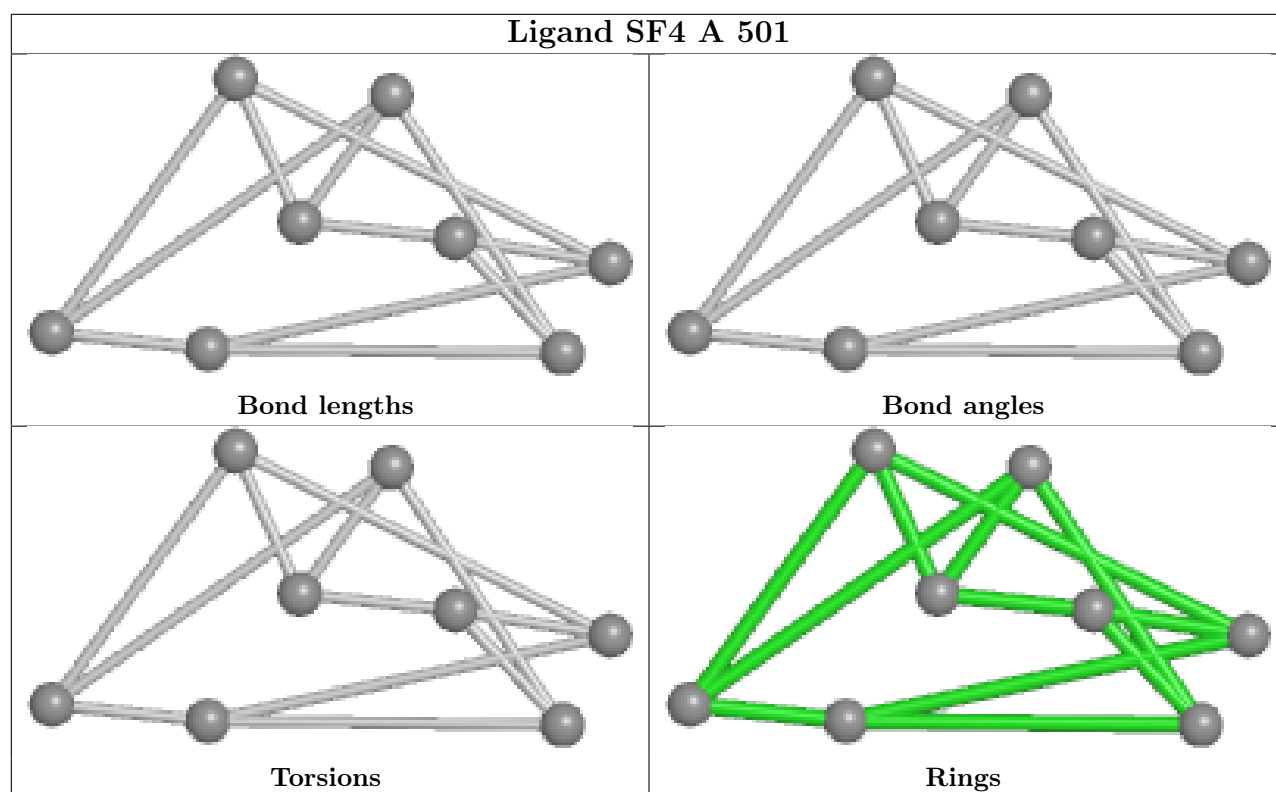












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

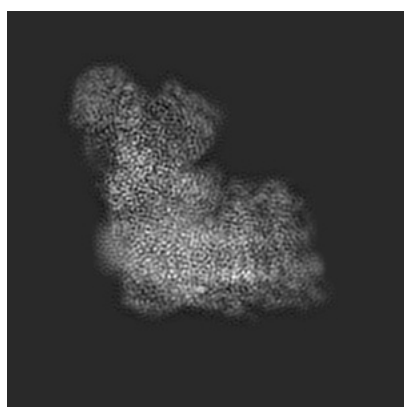
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-32308. These allow visual inspection of the internal detail of the map and identification of artifacts.

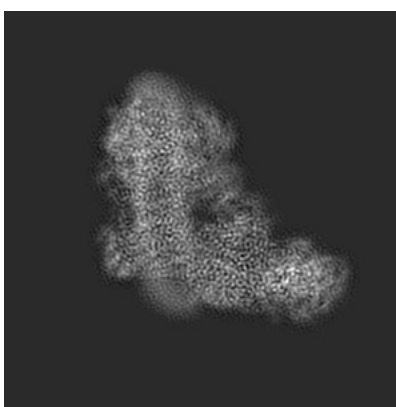
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

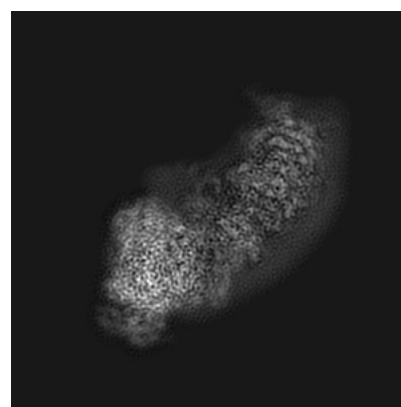
6.1.1 Primary map



X



Y

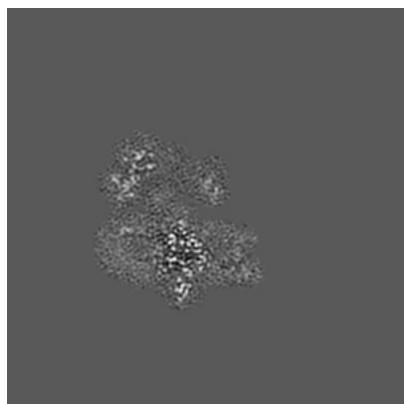


Z

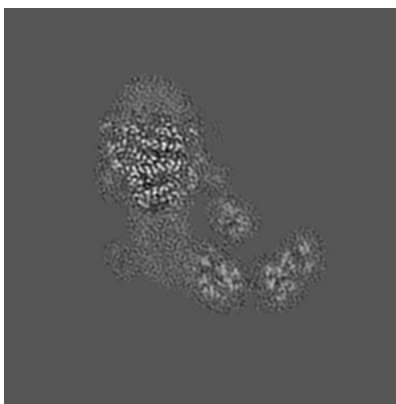
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

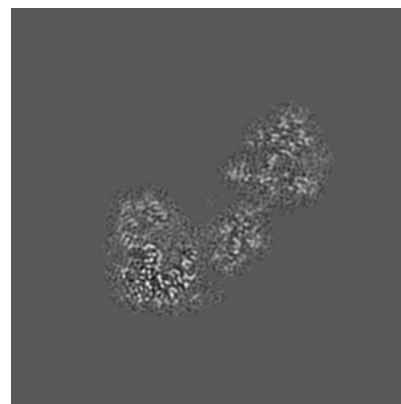
6.2.1 Primary map



X Index: 152



Y Index: 152

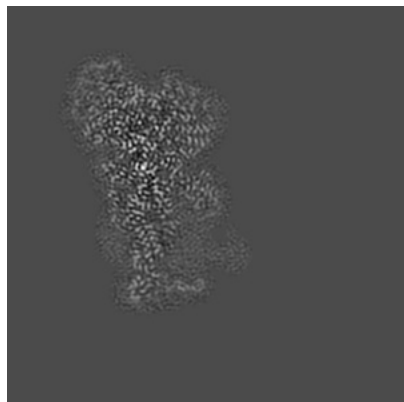


Z Index: 152

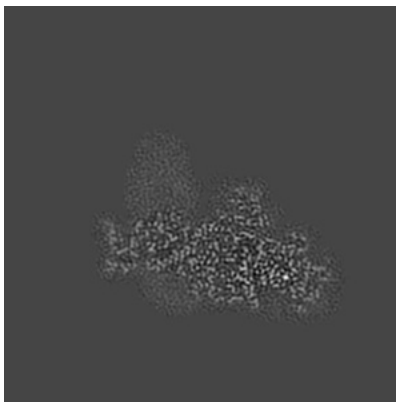
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

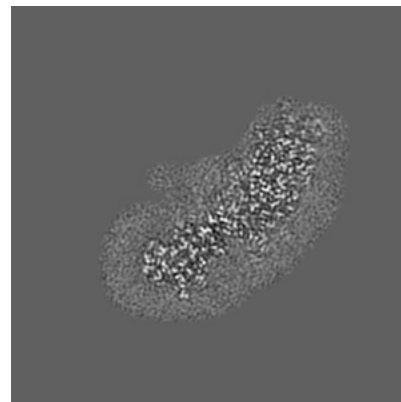
6.3.1 Primary map



X Index: 104



Y Index: 98

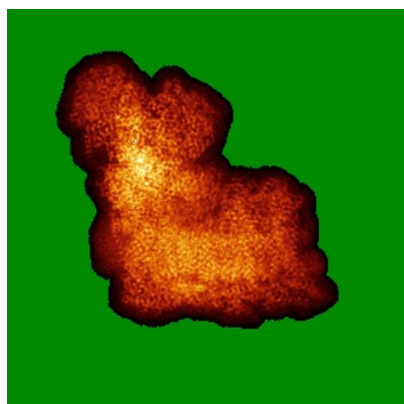


Z Index: 127

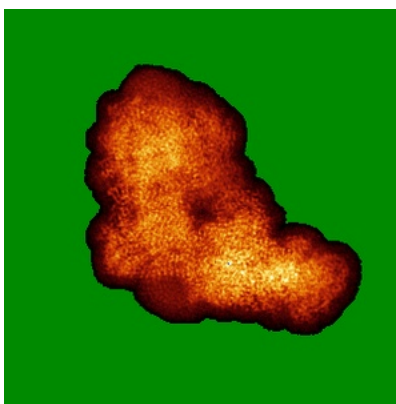
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

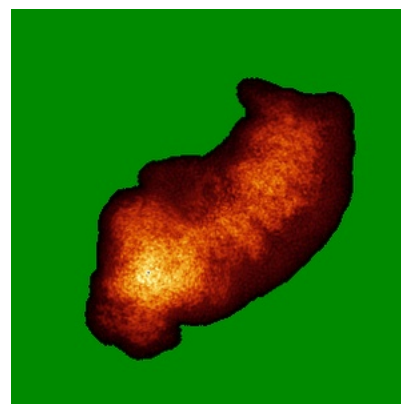
6.4.1 Primary map



X



Y

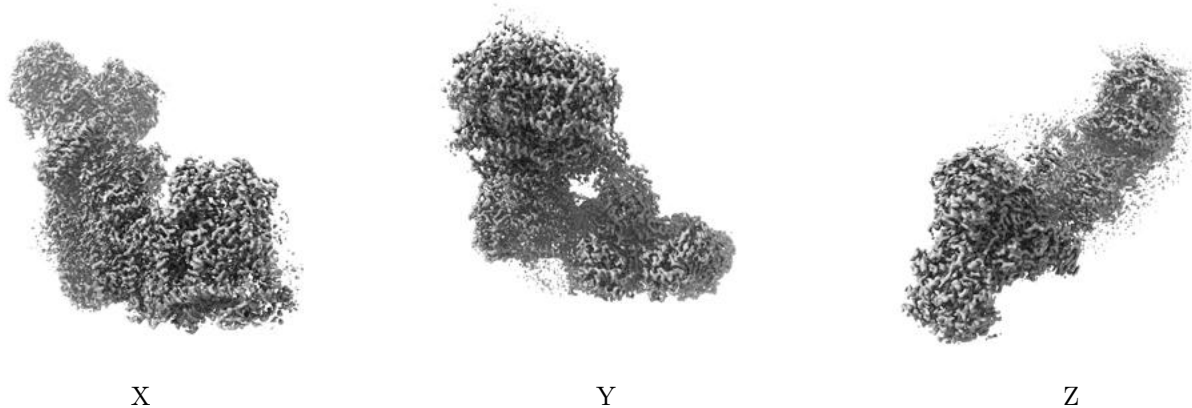


Z

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



The images above show the 3D surface view of the map at the recommended contour level 0.0299. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

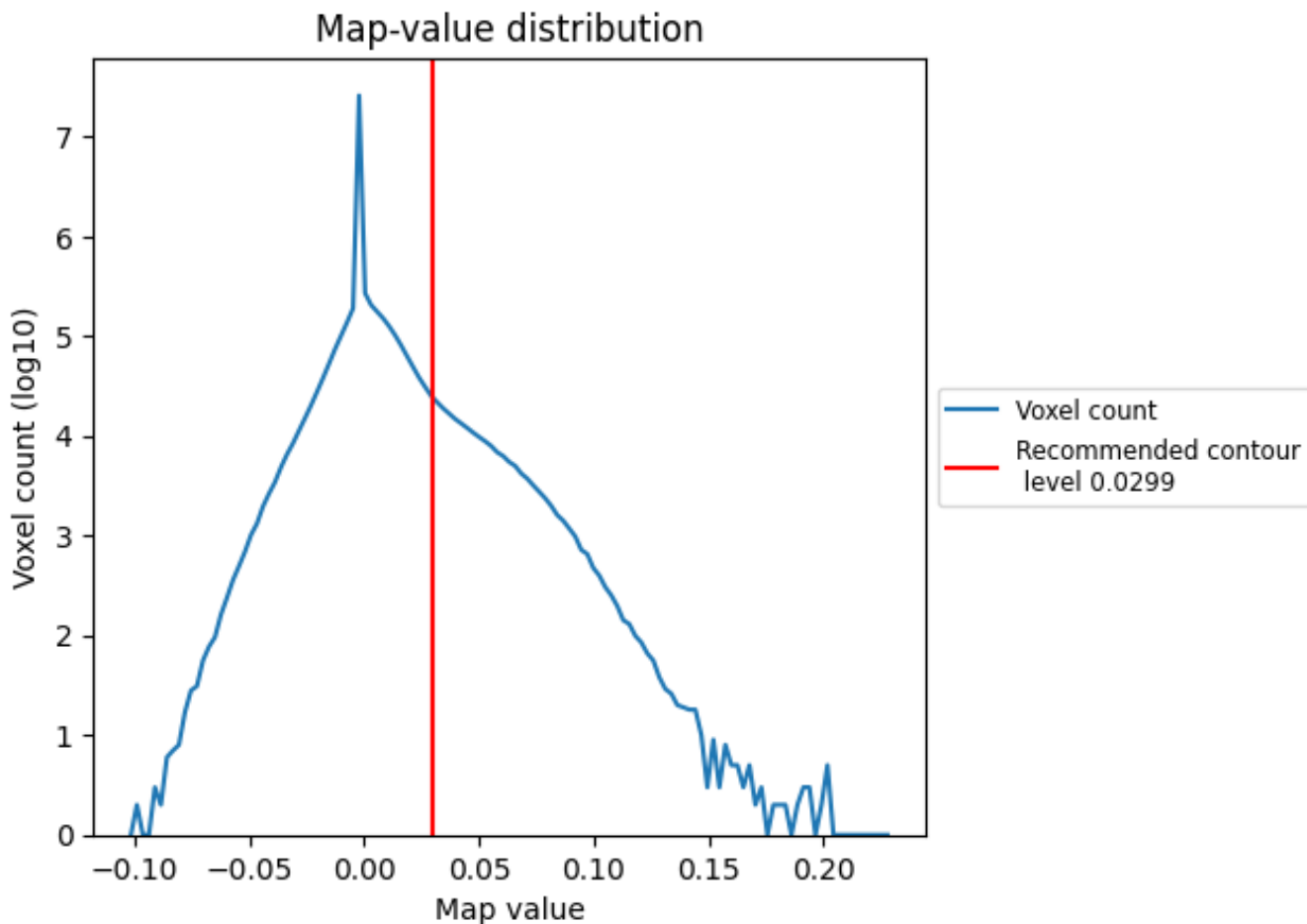
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

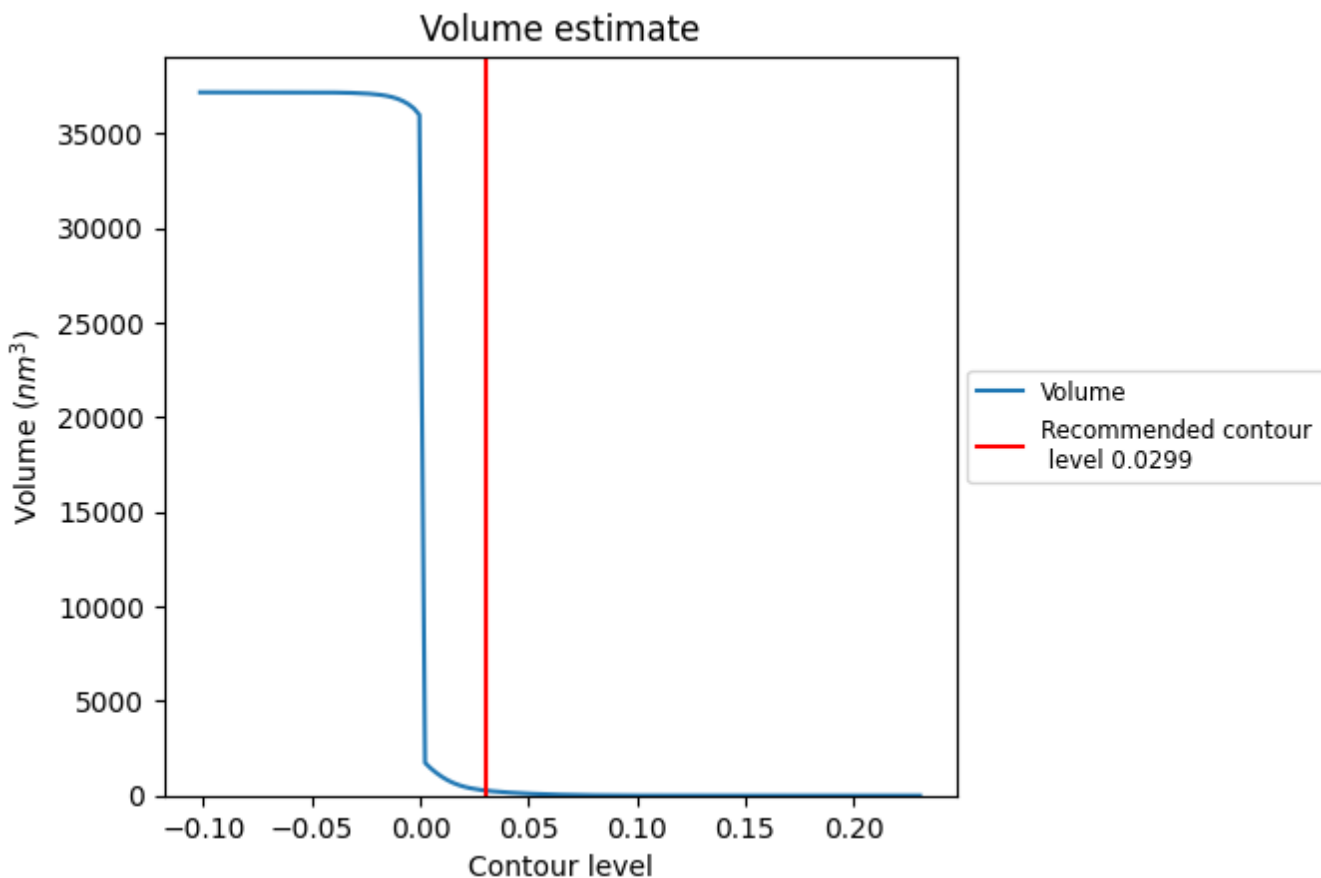
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

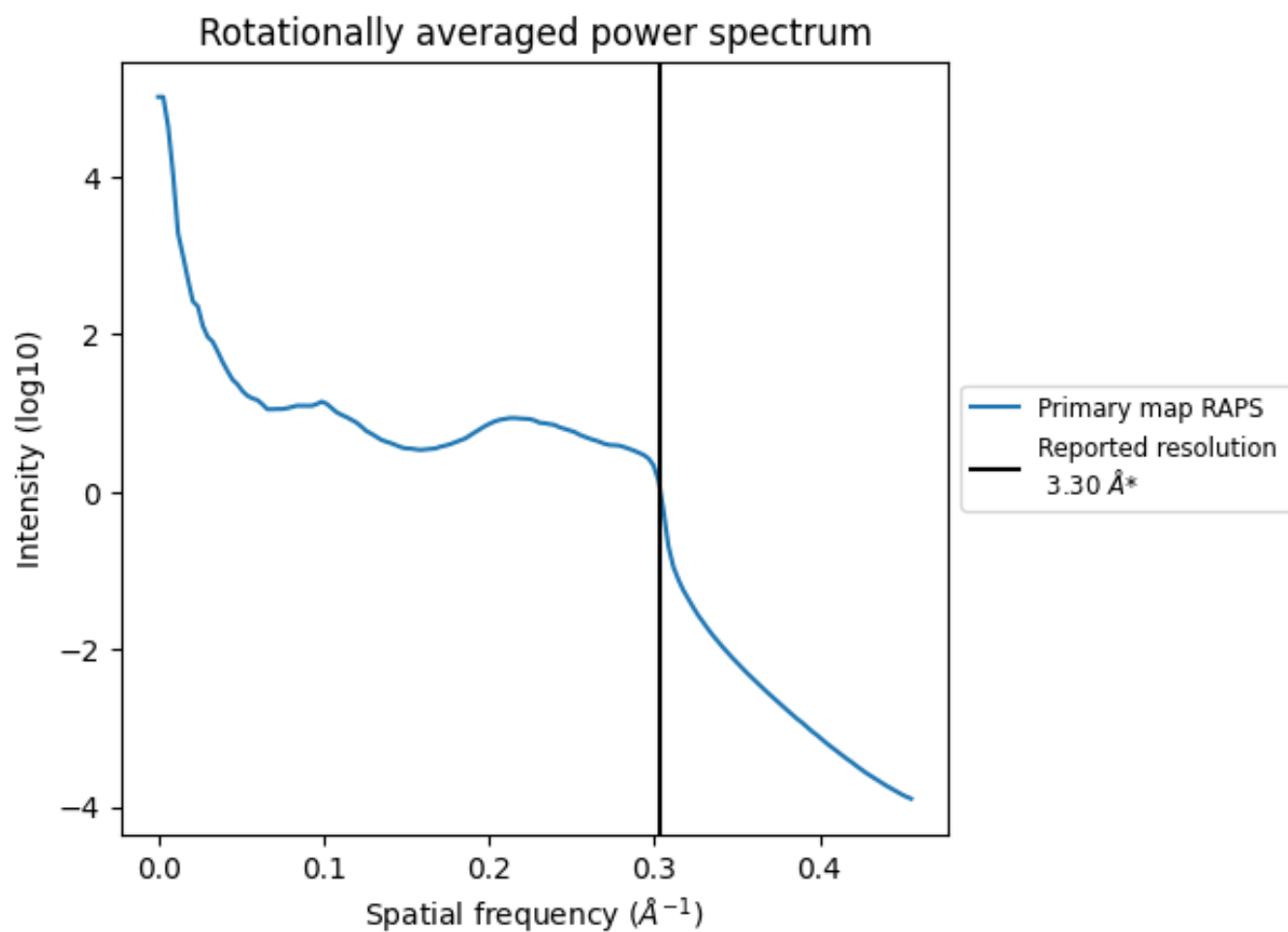
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 271 nm³; this corresponds to an approximate mass of 245 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 0.303\AA^{-1}

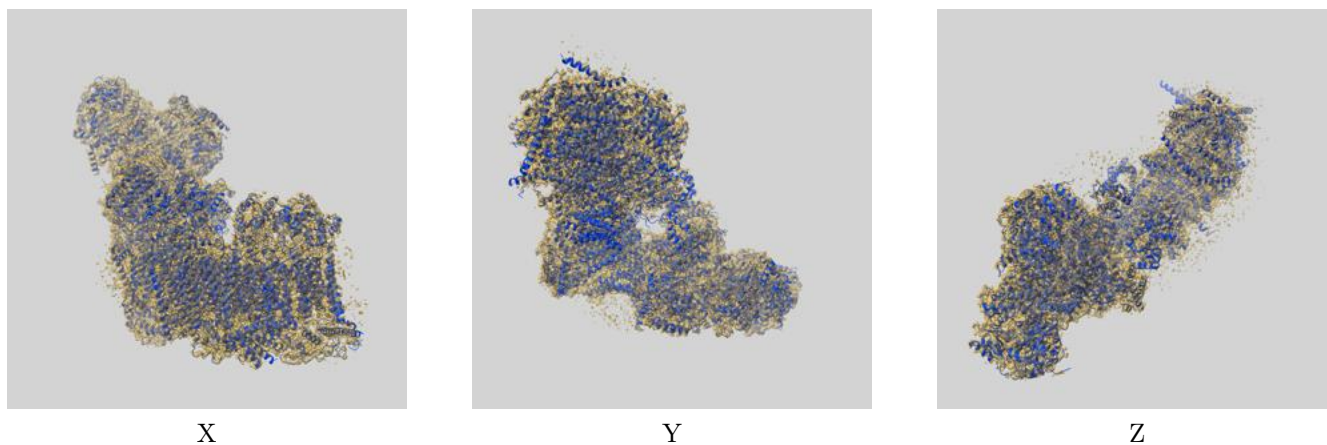
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

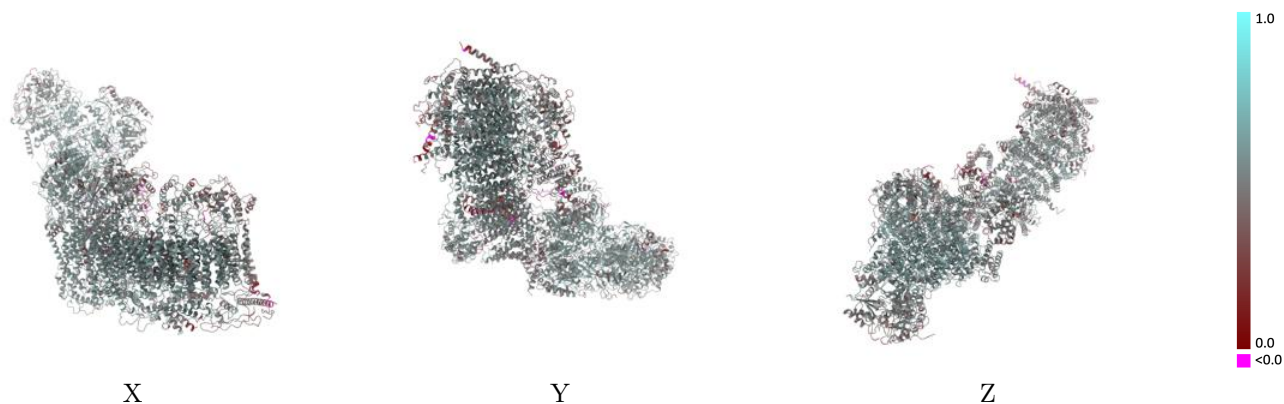
This section contains information regarding the fit between EMDB map EMD-32308 and PDB model 7W4M. Per-residue inclusion information can be found in section 3 on page 20.

9.1 Map-model overlay [i](#)



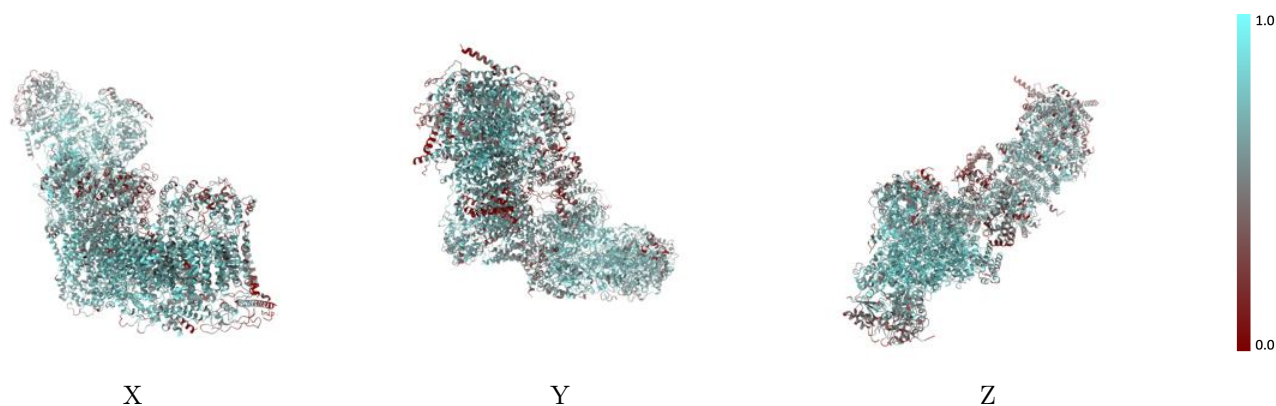
The images above show the 3D surface view of the map at the recommended contour level 0.0299 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



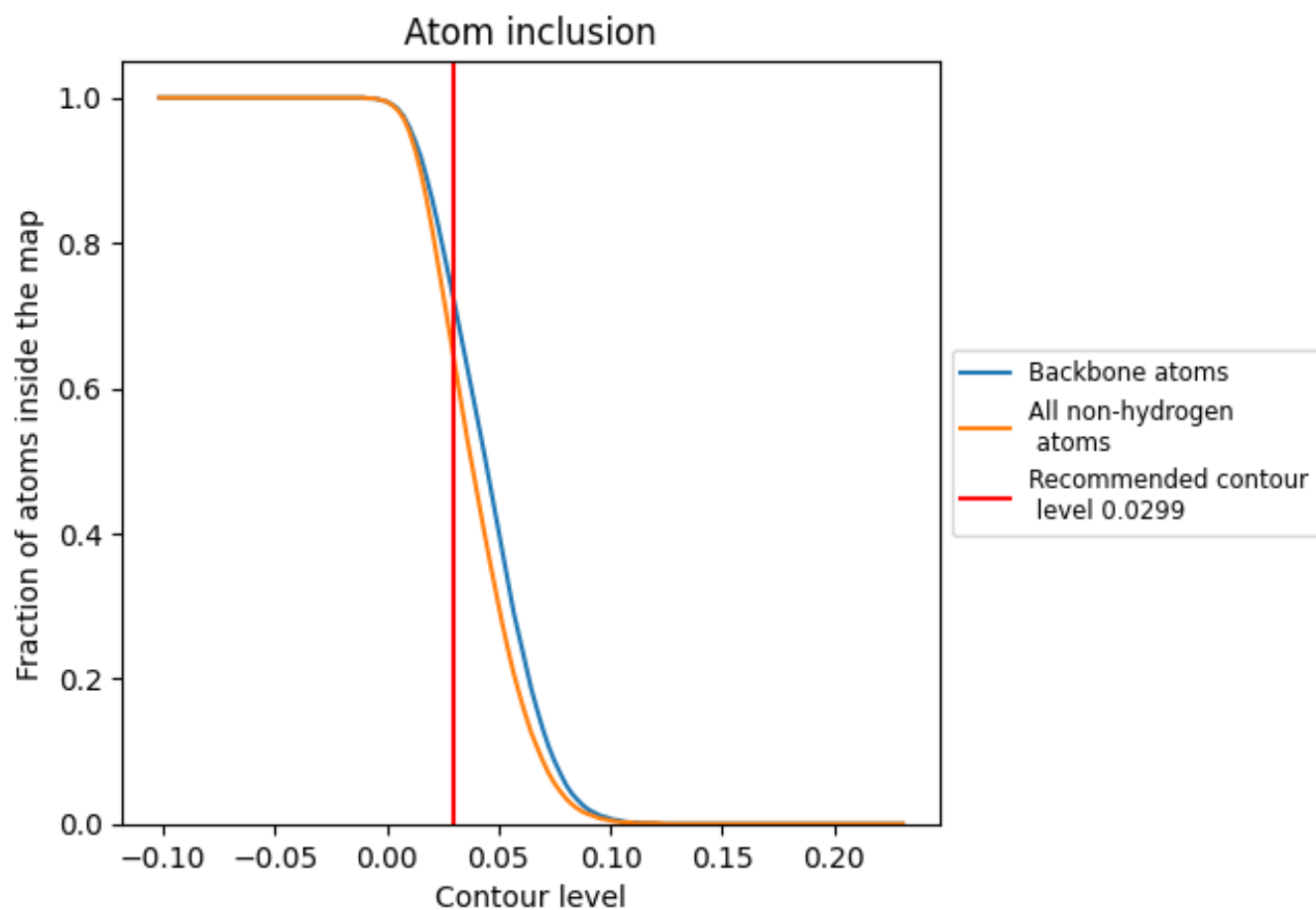
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0299).

9.4 Atom inclusion [i](#)



At the recommended contour level, 72% of all backbone atoms, 64% 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 (0.0299) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6420	0.5150
A	0.5840	0.4970
B	0.8400	0.5800
C	0.7950	0.5700
E	0.6550	0.5200
F	0.5240	0.4690
G	0.3160	0.3480
H	0.5930	0.5050
I	0.6770	0.5380
J	0.5940	0.5010
K	0.5530	0.4790
L	0.7390	0.5540
M	0.7190	0.5460
N	0.7340	0.5540
O	0.5440	0.4790
P	0.7980	0.5740
Q	0.7580	0.5620
S	0.7520	0.5450
T	0.6860	0.5470
U	0.6660	0.5260
V	0.2580	0.3720
W	0.7160	0.5360
X	0.4490	0.4380
Y	0.4380	0.4350
Z	0.3510	0.3720
a	0.6730	0.5400
b	0.4850	0.4470
c	0.5850	0.4900
d	0.6370	0.5030
e	0.5710	0.4840
f	0.5330	0.4640
g	0.6620	0.5350
h	0.6800	0.5350
i	0.7320	0.5530
j	0.5500	0.4810



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Chain	Atom inclusion	Q-score
k	 0.5970	 0.4950
l	 0.6500	 0.5290
m	 0.5810	 0.5000
n	 0.5500	 0.4840
o	 0.5910	 0.4970
p	 0.5710	 0.4760
r	 0.7600	 0.5620
s	 0.7310	 0.5320
u	 0.6650	 0.5260
v	 0.4280	 0.4120
w	 0.4680	 0.4640