Full wwPDB EM Validation Report ⓘ

Oct 26, 2026 – 01:18 pm GMT

PDB ID	:	9R13 / pdb_00009r13
EMDB ID	:	EMD-53491
Title	:	Bovine complex I at pH 6.0 in the deactive state (consensus)
Authors	:	Fisher, W.; Grba, D.N.; Hirst, J.
Deposited on	:	2025-04-25
Resolution	:	2.49 Å(reported)
Based on initial model	:	7QSN

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:

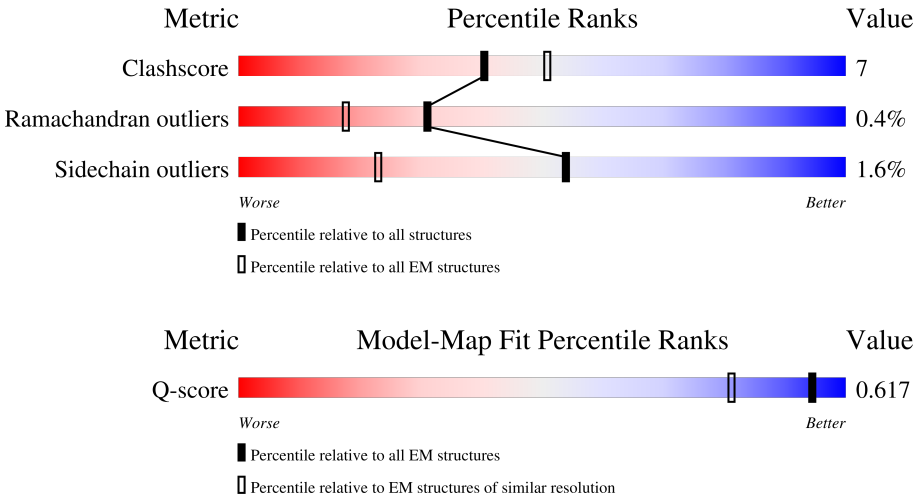
EMDB validation analysis	:	0.0.1.dev133
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.2
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.51

1 Overall quality at a glance

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

The reported resolution of this entry is 2.49 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.



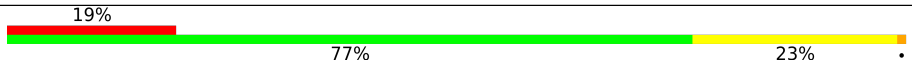
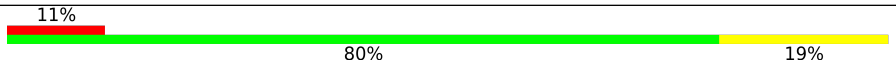
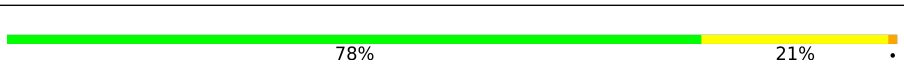
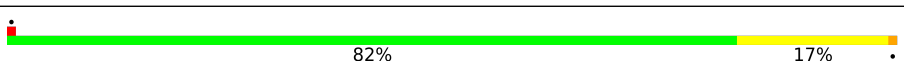
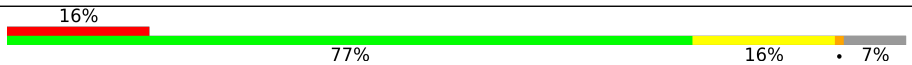
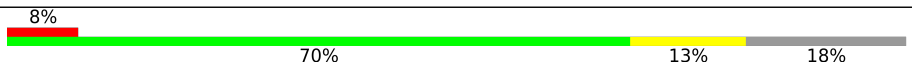
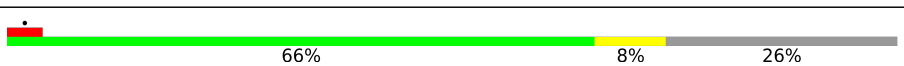
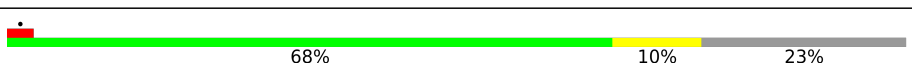
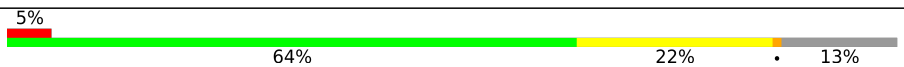
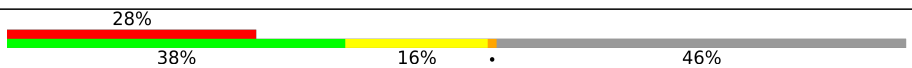
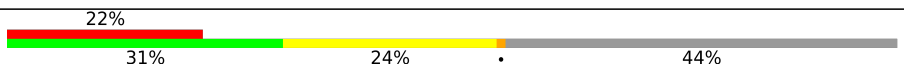
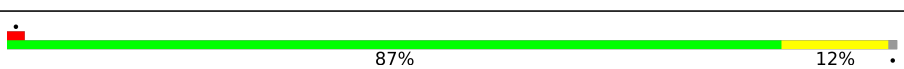
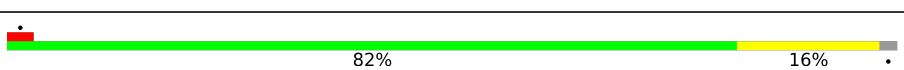
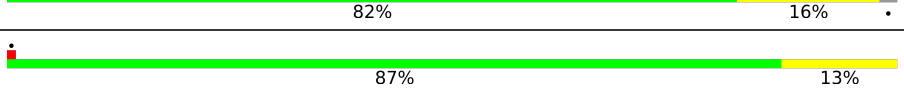
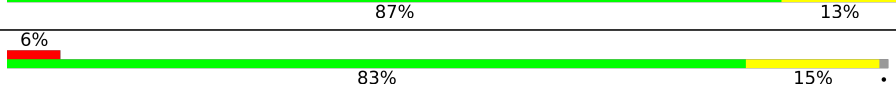
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	6237 (2.00 - 2.99)

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

Mol	Chain	Length	Quality of chain
1	A	115	8%, 65%, 25%, 8%
2	B	216	61%, 11%, 28%
3	C	266	69%, 9%, 22%
4	D	463	9%, 79%, 12%, 8%

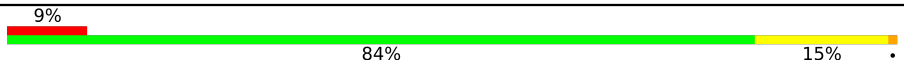
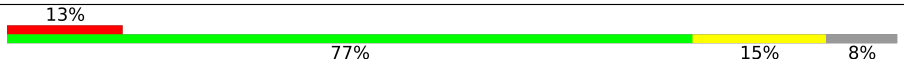
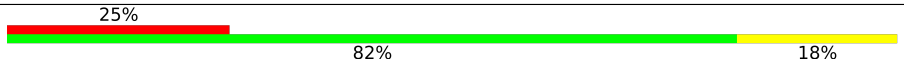
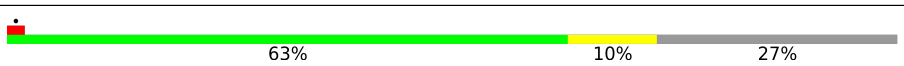
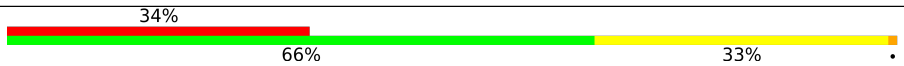
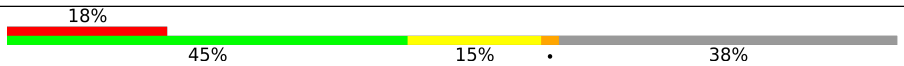
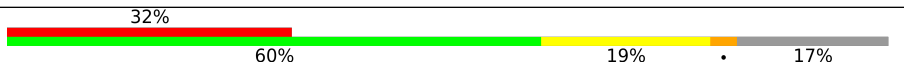
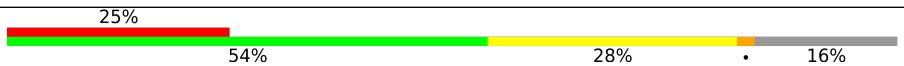
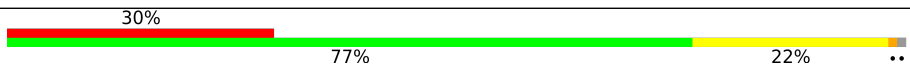
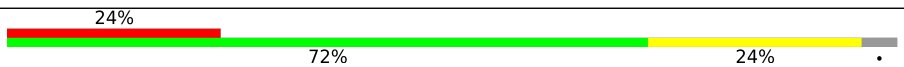
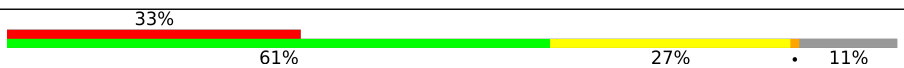
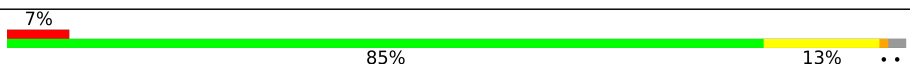
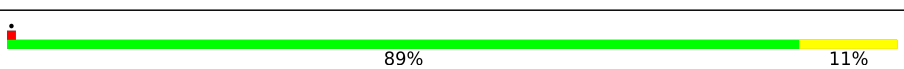
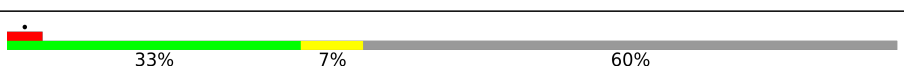
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Mol	Chain	Length	Quality of chain
5	E	249	
6	F	464	
7	G	727	
8	H	318	
9	I	212	
10	J	175	
11	K	98	
12	L	606	
13	M	459	
14	N	347	
15	O	343	
16	P	380	
17	Q	175	
18	R	124	
19	S	99	
20	T	156	
20	U	156	
21	V	116	
22	W	128	
23	X	172	
24	Y	141	
25	Z	144	
26	a	70	
27	b	84	
28	c	76	

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Mol	Chain	Length	Quality of chain
29	d	121	
30	e	106	
31	f	57	
32	g	154	
33	h	189	
34	i	128	
35	j	108	
36	k	98	
37	l	186	
38	m	129	
39	n	179	
40	o	137	
41	p	176	
42	q	145	
43	r	113	
44	s	109	

2 Entry composition

There are 59 unique types of molecules in this entry. The entry contains 70303 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	106	852	578	124	145	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	156	1248	795	225	214	14	0	0

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	427	3437	2194	593	625	25	0	0

There is a discrepancy between the modelled and reference sequences:

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	214	Total	C	N	O	S	0	0
			1659	1059	278	312	10		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	432	Total	C	N	O	S	0	0
			3326	2096	594	616	20		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	691	Total	C	N	O	S	0	0
			5298	3318	925	1016	39		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	308	Total	C	N	O	S	1	0
			2444	1640	377	404	23		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	175	Total	C	N	O	S	0	0
			1345	906	191	236	12		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	98	Total	C	N	O	S	0	0
			745	486	112	131	16		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	603	Total	C	N	O	S	0	0
			4775	3178	733	821	43		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	459	Total	C	N	O	S	5	0
			3694	2461	578	616	39		

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

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

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

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

There is a discrepancy between the modelled and reference sequences:

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
16	P	313	Total	C	N	O	S	0	0
			2492	1604	445	438	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Q	129	Total	C	N	O	S	0	0
			1049	659	188	199	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	R	96	Total	C	N	O	S	0	0
			740	454	140	143	3		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
20	T	85	Total	C	N	O	S	0	0
			688	444	101	138	5		
20	U	88	Total	C	N	O	S	0	0
			707	454	104	144	5		

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

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
V	0	ACE	MET	conflict	UNP P23935

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

Mol	Chain	Residues	Atoms					AltConf	Trace
22	W	115	Total	C	N	O	S	0	0
			977	625	181	167	4		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Y	141	Total	C	N	O	S	0	0
			1030	657	176	191	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Y	0	ACE	-	acetylation	UNP Q8HXG6

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms				AltConf	Trace
28	c	49	Total	C	N	O	0	0
			414	273	70	71		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
29	d	121	Total	C	N	O	S	0	0
			999	650	172	172	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
d	0	ACE	-	acetylation	UNP Q02827

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	e	98	Total	C	N	O	S	0	0
			825	521	157	141	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
31	f	57	Total	C	N	O	S	0	0
			492	322	86	82	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
32	g	101	Total	C	N	O	S	0	0
			846	544	140	158	4		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
34	i	128	Total	C	N	O	S	0	0
			1097	722	191	183	1		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
i	0	ACE	-	acetylation	UNP Q02367

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
37	l	156	Total	C	N	O	S	0	0
			1314	850	216	240	8		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
38	m	128	Total	C	N	O	0	0
			1067	684	188	195		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
39	n	171	Total	C	N	O	S	1	0
			1498	958	276	257	7		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
41	p	173	Total	C	N	O	S	0	0
			1450	909	268	265	8		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
43	r	96	Total	C	N	O	S	0	0
			776	490	144	139	3		

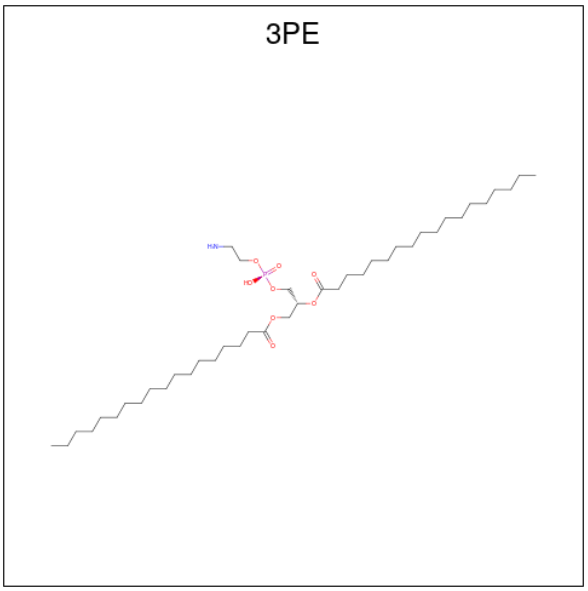
There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
r	0	ACE	-	acetylation	UNP Q05752

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

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

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



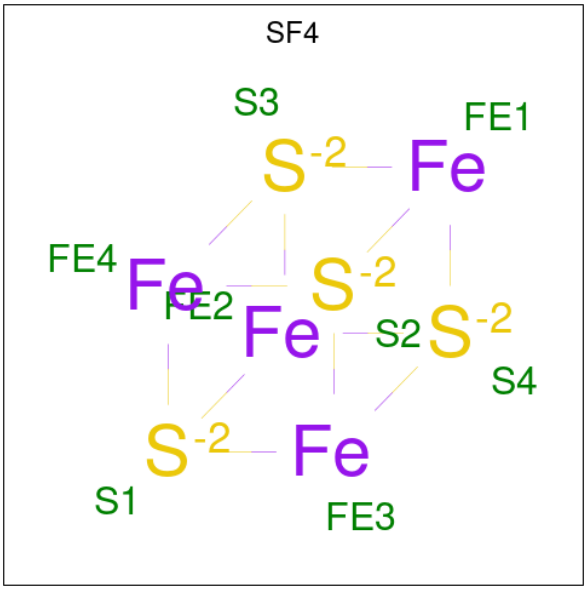
Mol	Chain	Residues	Atoms					AltConf
45	A	1	Total	C	N	O	P	0
			47	37	1	8	1	
45	A	1	Total	C	N	O	P	0
			37	27	1	8	1	
45	A	1	Total	C	N	O	P	0
			51	41	1	8	1	
45	H	1	Total	C	N	O	P	0
			36	26	1	8	1	
45	I	1	Total	C	N	O	P	0
			51	41	1	8	1	
45	K	1	Total	C	N	O	P	0
			43	33	1	8	1	
45	L	1	Total	C	N	O	P	0
			51	41	1	8	1	
45	L	1	Total	C	N	O	P	0
			43	33	1	8	1	
45	L	1	Total	C	N	O	P	0
			51	41	1	8	1	
45	L	1	Total	C	N	O	P	0
			45	35	1	8	1	
45	M	1	Total	C	N	O	P	0
			43	33	1	8	1	
45	M	1	Total	C	N	O	P	0
			51	41	1	8	1	
45	O	1	Total	C	N	O	P	0
			36	26	1	8	1	
45	O	1	Total	C	N	O	P	0
			41	31	1	8	1	

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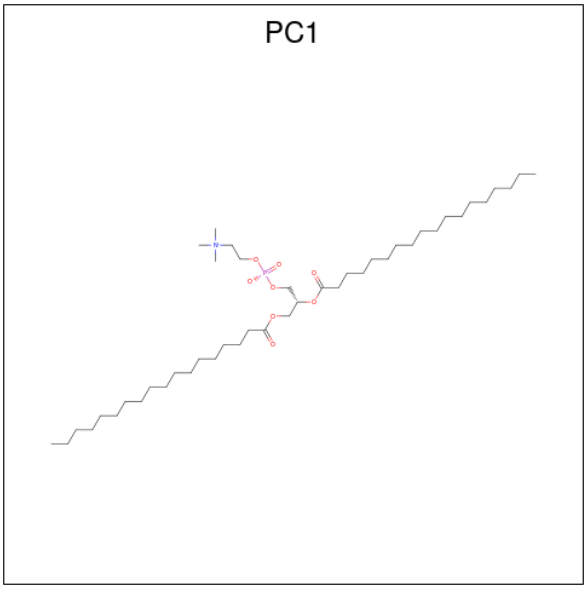
Mol	Chain	Residues	Atoms					AltConf
45	Y	1	Total	C	N	O	P	0
			39	29	1	8	1	
45	Y	1	Total	C	N	O	P	0
			44	34	1	8	1	
45	Y	1	Total	C	N	O	P	0
			32	22	1	8	1	
45	Z	1	Total	C	N	O	P	0
			51	41	1	8	1	
45	Z	1	Total	C	N	O	P	0
			43	33	1	8	1	
45	d	1	Total	C	N	O	P	0
			49	39	1	8	1	
45	f	1	Total	C	N	O	P	0
			31	21	1	8	1	
45	h	1	Total	C	N	O	P	0
			36	26	1	8	1	
45	h	1	Total	C	N	O	P	0
			39	29	1	8	1	
45	j	1	Total	C	N	O	P	0
			39	29	1	8	1	
45	m	1	Total	C	N	O	P	0
			40	30	1	8	1	

- Molecule 46 is IRON/SULFUR CLUSTER (CCD ID: SF4) (formula: Fe_4S_4).



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

- Molecule 47 is 1,2-DIACYL-SN-GLYCERO-3-PHOSPHOCHOLINE (CCD ID: PC1) (formula: $C_{44}H_{88}NO_8P$).



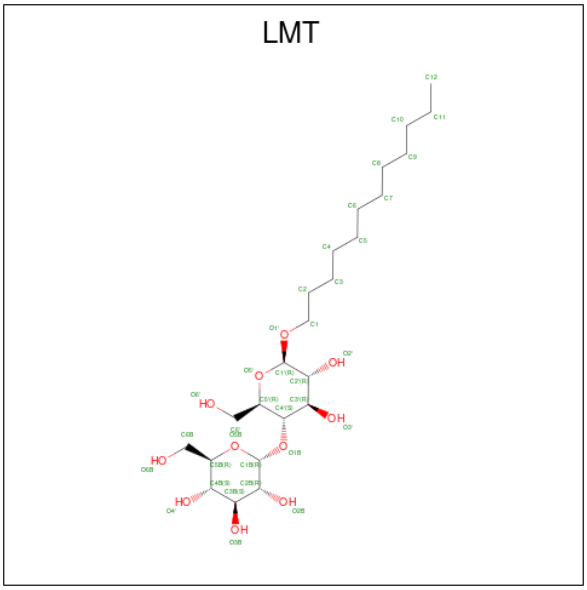
Mol	Chain	Residues	Atoms	AltConf
47	B	1	Total C N O P 51 41 1 8 1	0
47	H	1	Total C N O P 46 36 1 8 1	0
47	M	1	Total C N O P 46 36 1 8 1	0
47	M	1	Total C N O P 49 39 1 8 1	0
47	O	1	Total C N O P 30 20 1 8 1	0

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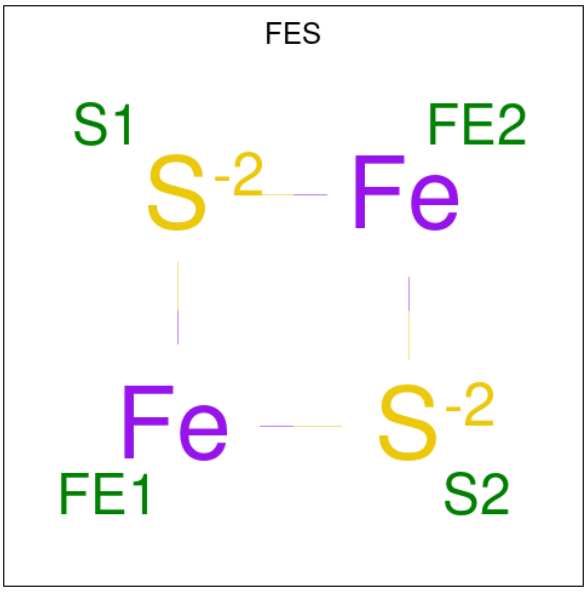
Mol	Chain	Residues	Atoms					AltConf
47	d	1	Total	C	N	O	P	0
			40	30	1	8	1	

- Molecule 48 is DODECYL-BETA-D-MALTOSIDE (CCD ID: LMT) (formula: $C_{24}H_{46}O_{11}$).



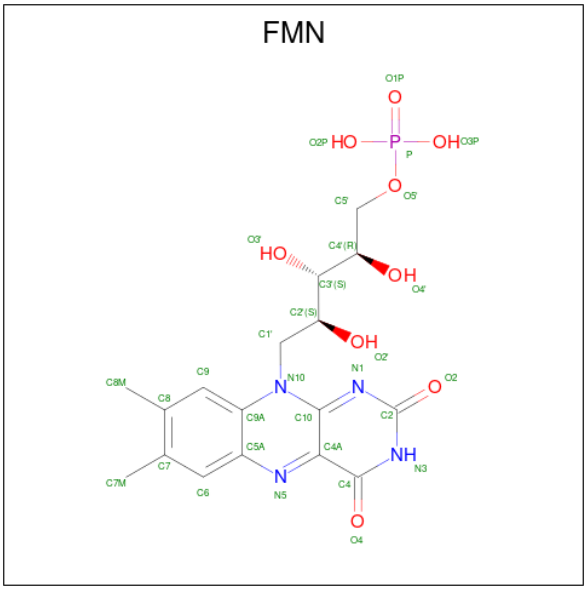
Mol	Chain	Residues	Atoms			AltConf
48	B	1	Total	C	O	0
			35	24	11	
48	H	1	Total	C	O	0
			35	24	11	
48	L	1	Total	C	O	0
			35	24	11	
48	M	1	Total	C	O	0
			35	24	11	
48	M	1	Total	C	O	0
			35	24	11	
48	Y	1	Total	C	O	0
			35	24	11	
48	m	1	Total	C	O	0
			35	24	11	

- Molecule 49 is FE2/S2 (INORGANIC) CLUSTER (CCD ID: FES) (formula: Fe_2S_2).



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

- Molecule 50 is FLAVIN MONONUCLEOTIDE (CCD ID: FMN) (formula: $C_{17}H_{21}N_4O_9P$).

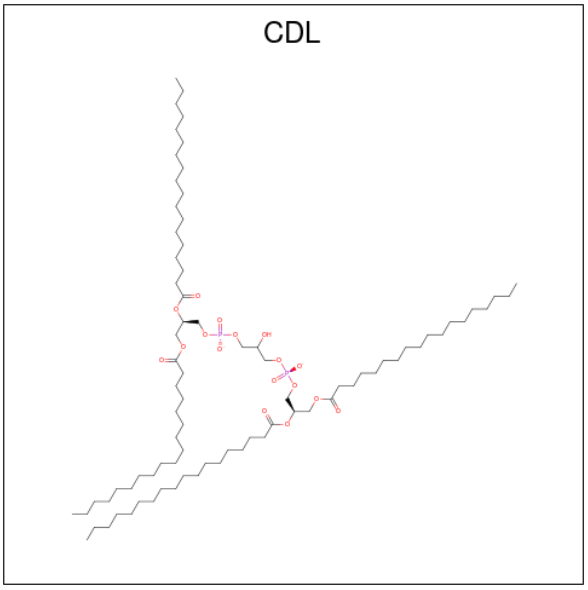


Mol	Chain	Residues	Atoms					AltConf
50	F	1	Total	C	N	O	P	0
			31	17	4	9	1	

- Molecule 51 is POTASSIUM ION (CCD ID: K) (formula: K).

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

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

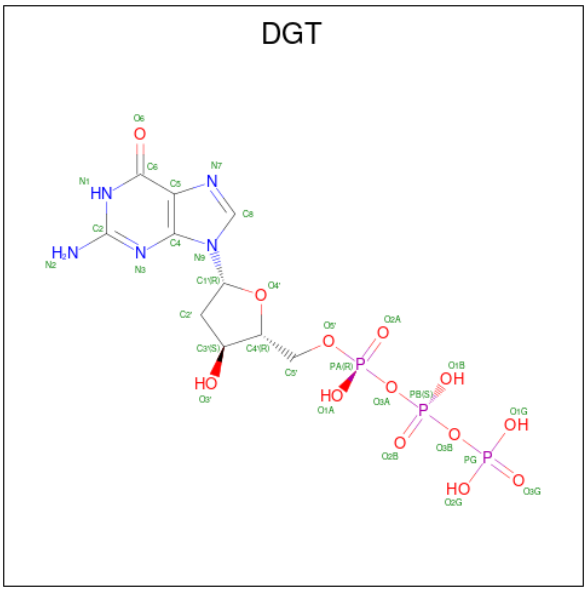


Mol	Chain	Residues	Atoms	AltConf
52	L	1	Total C O P 79 60 17 2	0
52	N	1	Total C O P 85 66 17 2	0
52	X	1	Total C O P 86 67 17 2	0
52	d	1	Total C O P 65 46 17 2	0
52	h	1	Total C O P 68 49 17 2	0
52	q	1	Total C O P 64 45 17 2	0

- Molecule 53 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

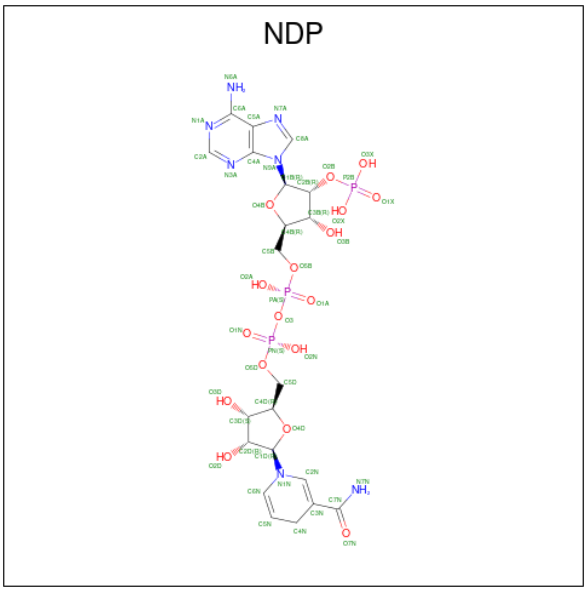
Mol	Chain	Residues	Atoms	AltConf
53	O	1	Total Mg 1 1	0

- Molecule 54 is 2'-DEOXYGUANOSINE-5'-TRIPHOSPHATE (CCD ID: DGT) (formula: $C_{10}H_{16}N_5O_{13}P_3$).



Mol	Chain	Residues	Atoms					AltConf
54	O	1	Total	C	N	O	P	0
			31	10	5	13	3	

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

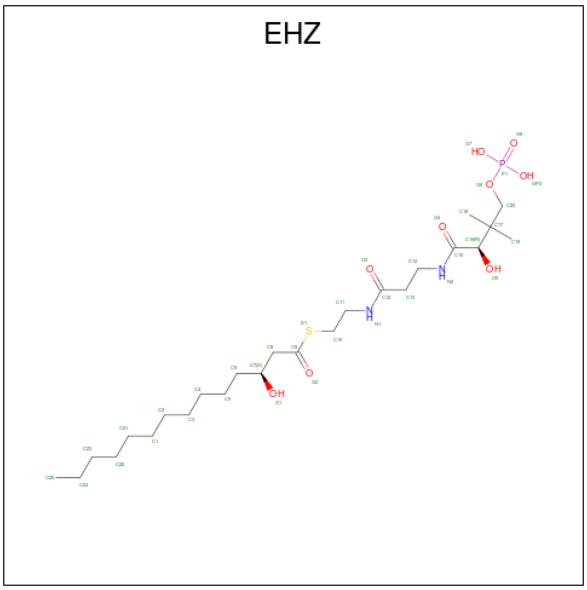


Mol	Chain	Residues	Atoms					AltConf
55	P	1	Total	C	N	O	P	0
			48	21	7	17	3	

- Molecule 56 is ZINC ION (CCD ID: ZN) (formula: Zn).

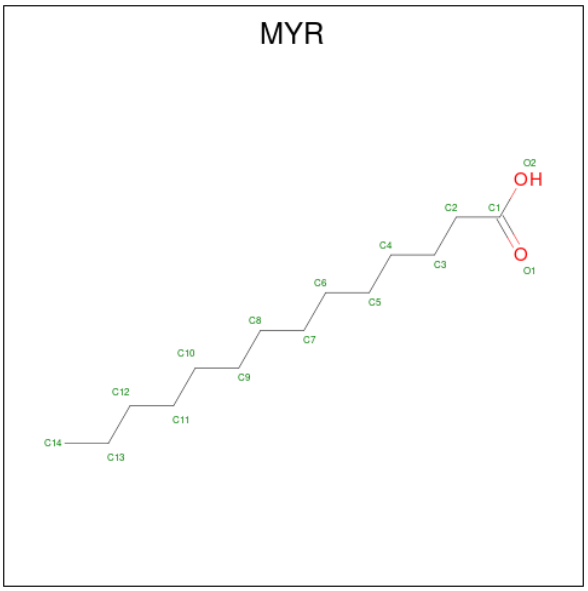
Mol	Chain	Residues	Atoms	AltConf
56	R	1	Total Zn 1 1	0

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



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

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



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

- Molecule 59 is water.

Mol	Chain	Residues	Atoms	AltConf
59	A	18	Total O 18 18	0
59	B	57	Total O 57 57	0
59	C	95	Total O 95 95	0
59	D	147	Total O 147 147	0
59	E	29	Total O 29 29	0
59	F	80	Total O 80 80	0
59	G	220	Total O 220 220	0
59	H	76	Total O 76 76	0
59	I	89	Total O 89 89	0
59	J	22	Total O 22 22	0
59	K	17	Total O 17 17	0

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Mol	Chain	Residues	Atoms	AltConf
59	L	129	Total O 129 129	0
59	M	120	Total O 120 120	0
59	N	79	Total O 79 79	0
59	O	35	Total O 35 35	0
59	P	57	Total O 57 57	0
59	Q	93	Total O 93 93	0
59	R	22	Total O 22 22	0
59	S	3	Total O 3 3	0
59	T	2	Total O 2 2	0
59	U	15	Total O 15 15	0
59	V	10	Total O 10 10	0
59	W	15	Total O 15 15	0
59	X	42	Total O 42 42	0
59	Y	1	Total O 1 1	0
59	Z	41	Total O 41 41	0
59	a	12	Total O 12 12	0
59	b	3	Total O 3 3	0
59	c	1	Total O 1 1	0
59	d	30	Total O 30 30	0
59	e	24	Total O 24 24	0
59	f	6	Total O 6 6	0

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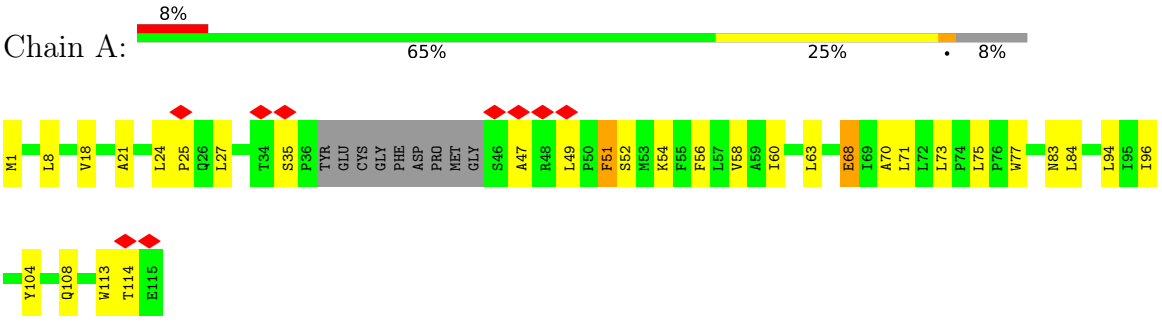
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Mol	Chain	Residues	Atoms	AltConf
59	g	21	Total O 21 21	0
59	h	35	Total O 35 35	0
59	i	8	Total O 8 8	0
59	j	4	Total O 4 4	0
59	k	4	Total O 4 4	0
59	l	42	Total O 42 42	0
59	m	27	Total O 27 27	0
59	n	32	Total O 32 32	0
59	o	19	Total O 19 19	0
59	p	36	Total O 36 36	0
59	q	29	Total O 29 29	0
59	r	21	Total O 21 21	0
59	s	10	Total O 10 10	0

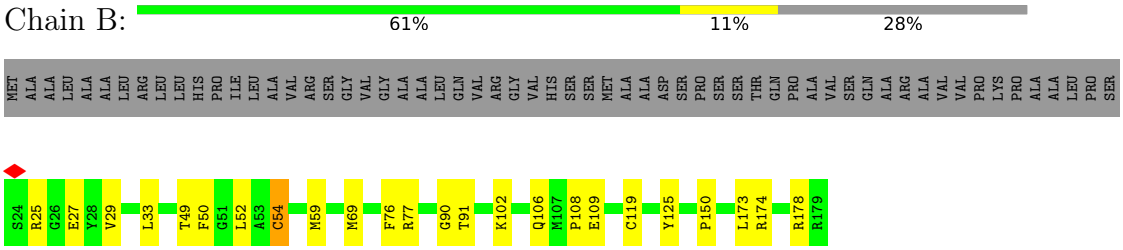
3 Residue-property plots (i)

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

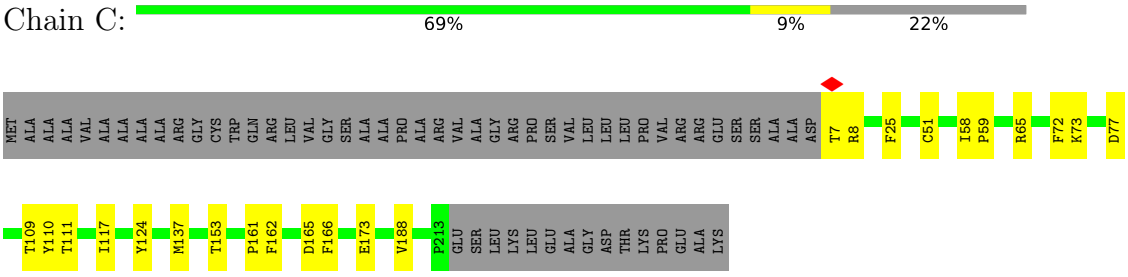
• Molecule 1: NADH-ubiquinone oxidoreductase chain 3



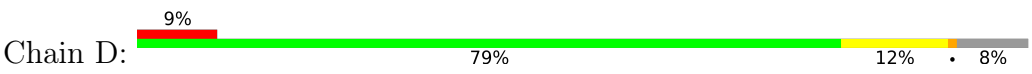
• Molecule 2: NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial

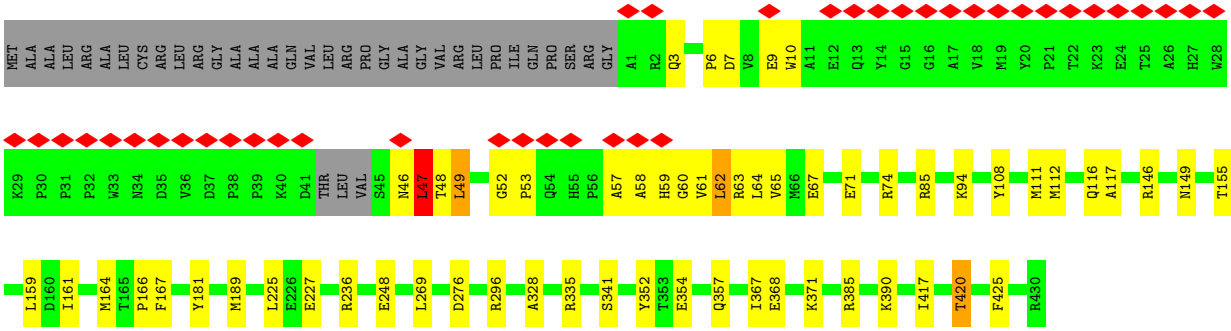


• Molecule 3: NADH dehydrogenase [ubiquinone] iron-sulfur protein 3, mitochondrial



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

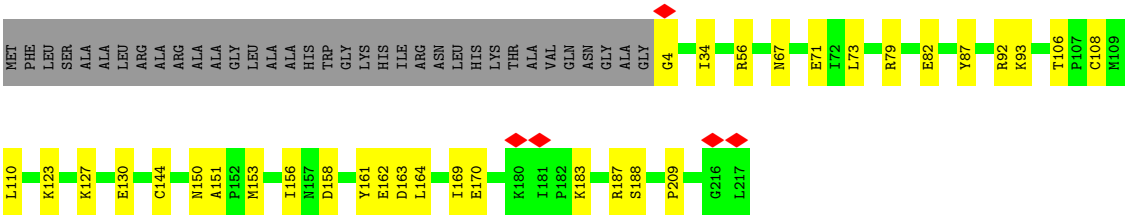




• Molecule 5: NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial

Chain E:

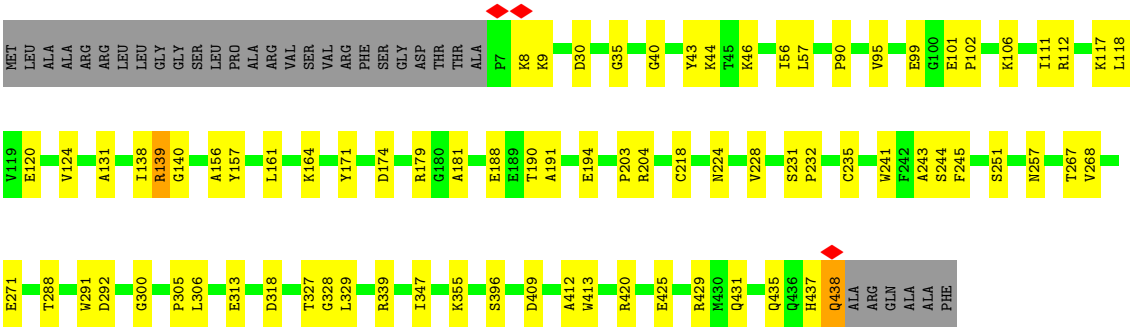




• Molecule 6: NADH dehydrogenase [ubiquinone] flavoprotein 1, mitochondrial

Chain F:

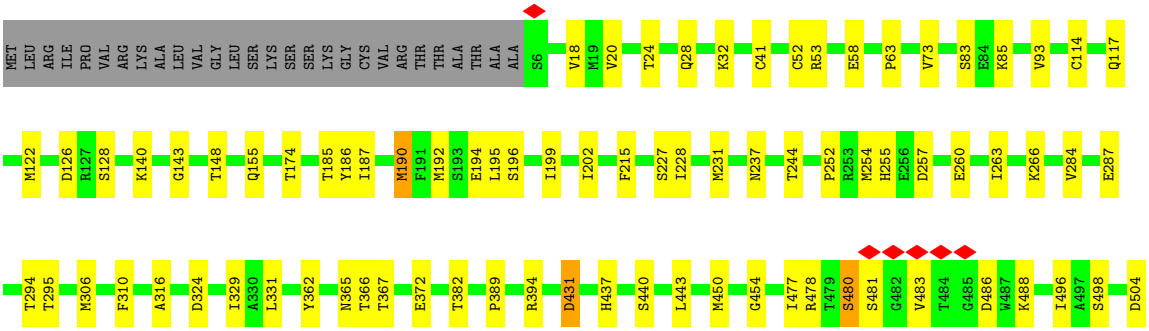


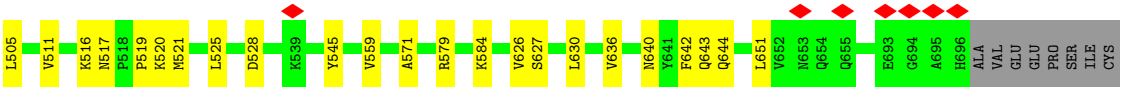


• Molecule 7: NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial

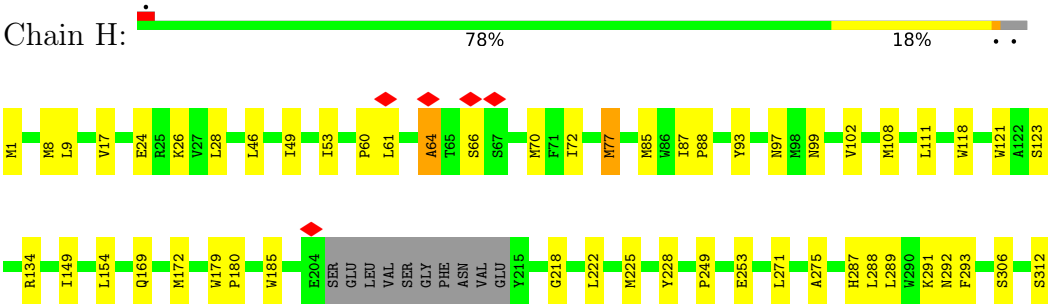
Chain G:



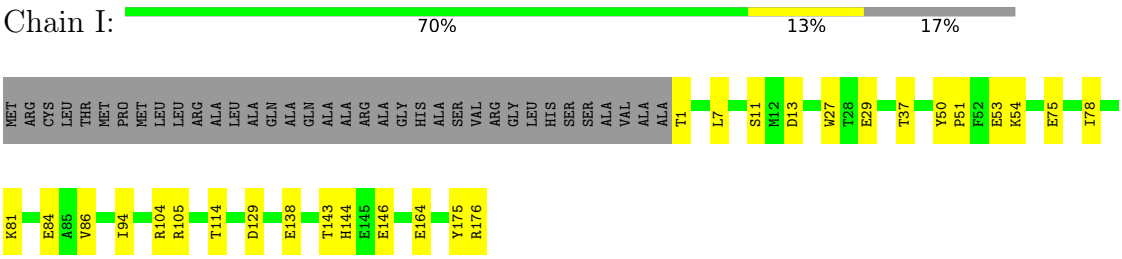




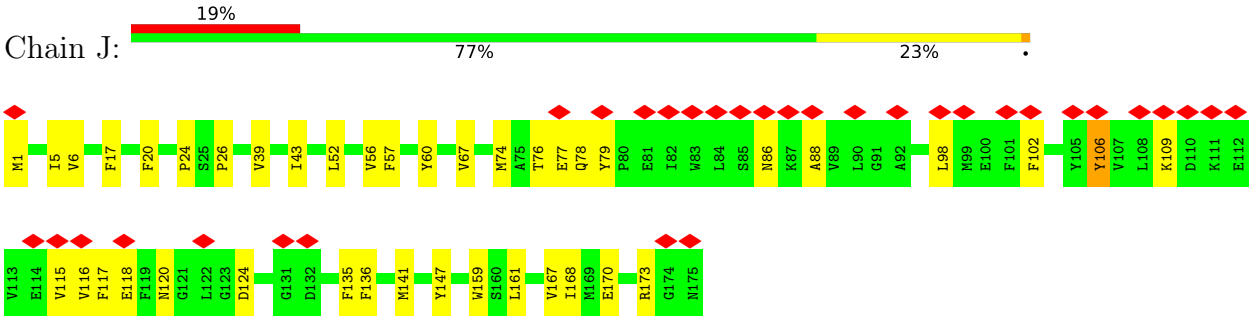
• Molecule 8: NADH-ubiquinone oxidoreductase chain 1



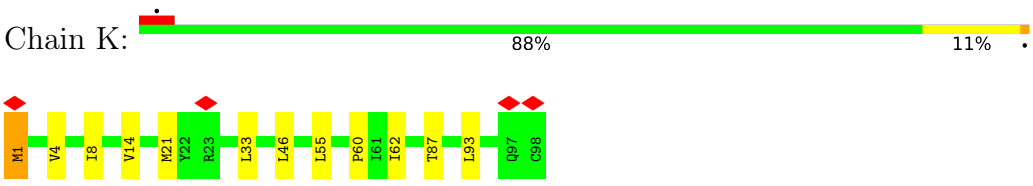
• Molecule 9: NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial



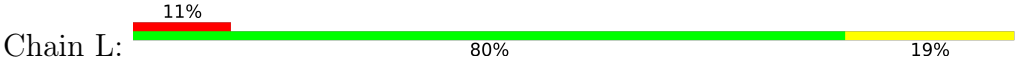
• Molecule 10: NADH-ubiquinone oxidoreductase chain 6

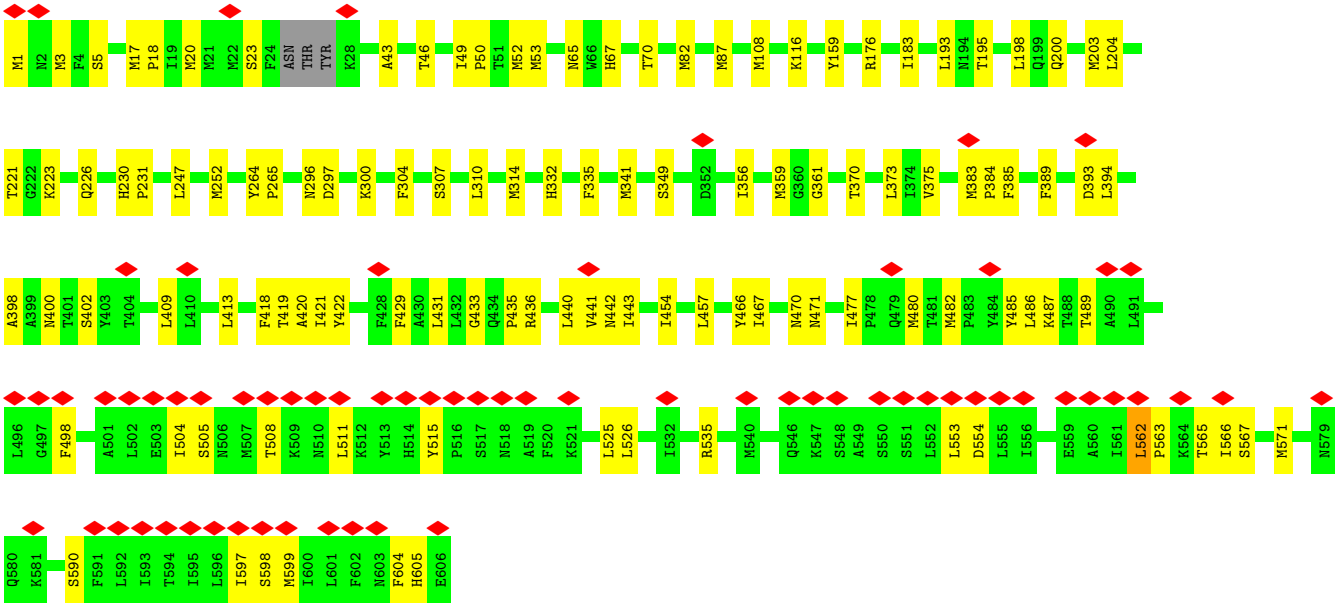


• Molecule 11: NADH-ubiquinone oxidoreductase chain 4L



• Molecule 12: NADH-ubiquinone oxidoreductase chain 5

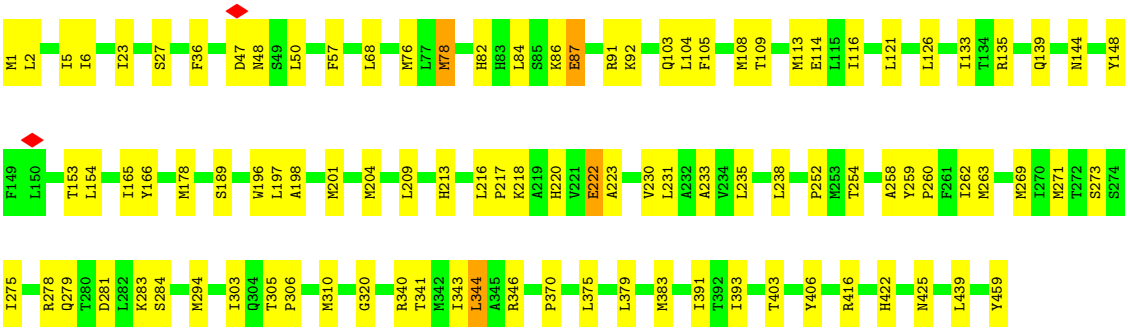




• Molecule 13: NADH-ubiquinone oxidoreductase chain 4

Chain M:

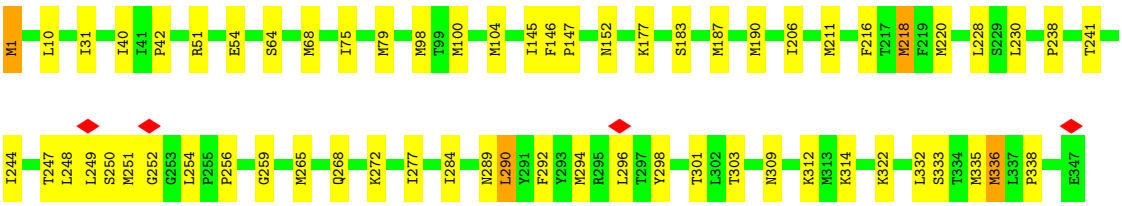




• Molecule 14: NADH-ubiquinone oxidoreductase chain 2

Chain N:

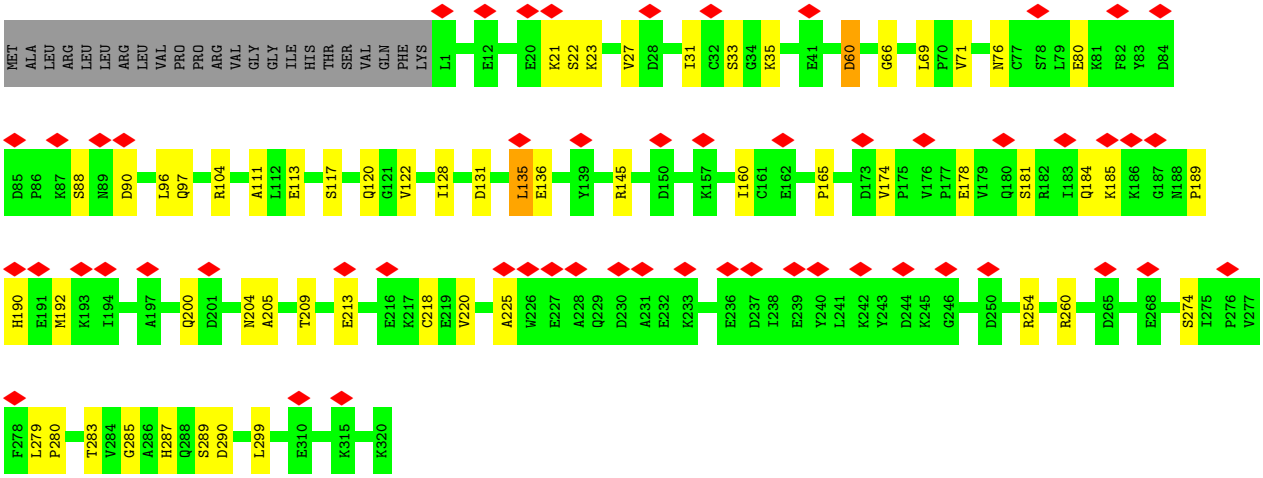




• Molecule 15: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial

Chain O:

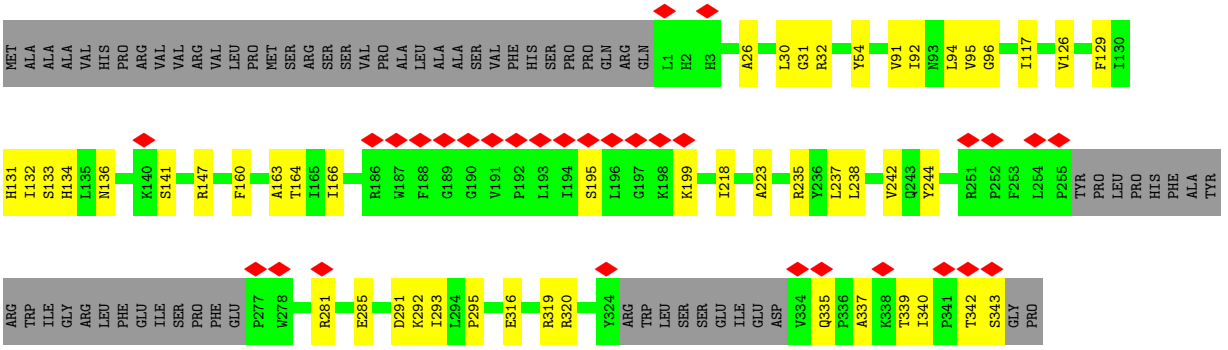




• Molecule 16: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 9, mitochondrial

Chain P:

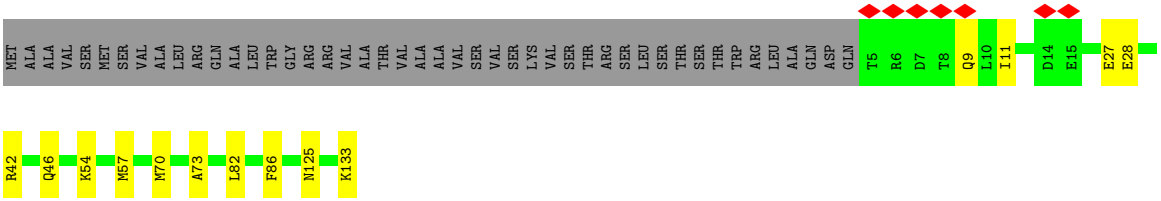




• Molecule 17: NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial

Chain Q:

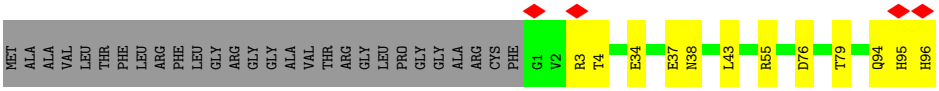




• Molecule 18: NADH dehydrogenase [ubiquinone] iron-sulfur protein 6, mitochondrial

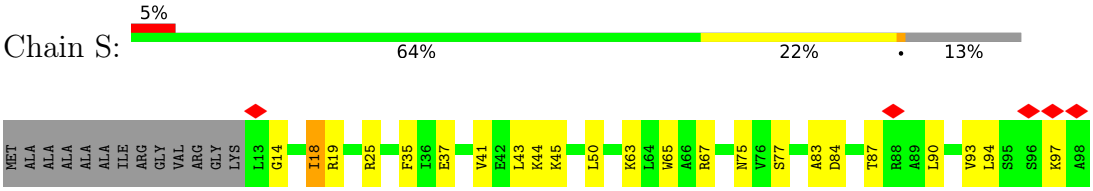
Chain R:





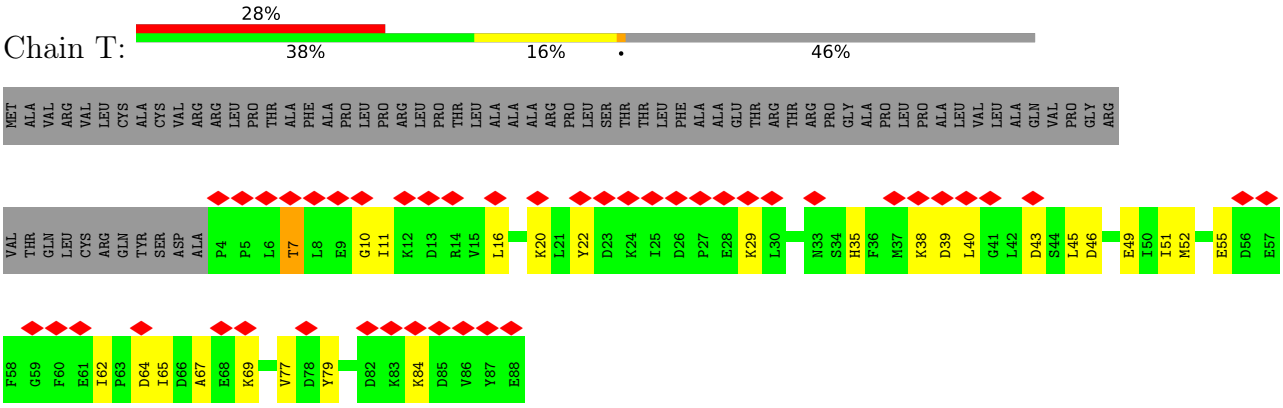
• Molecule 19: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2

Chain S:



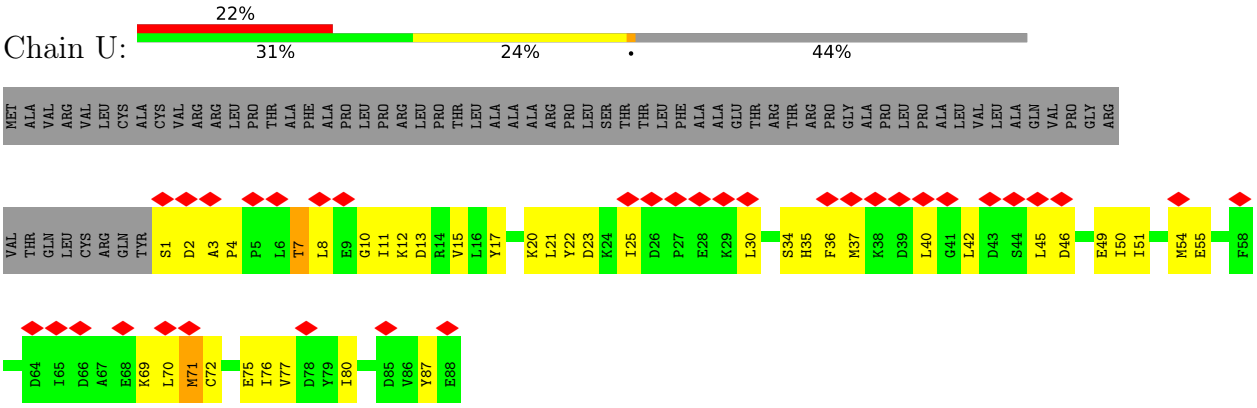
• Molecule 20: Acyl carrier protein, mitochondrial

Chain T:



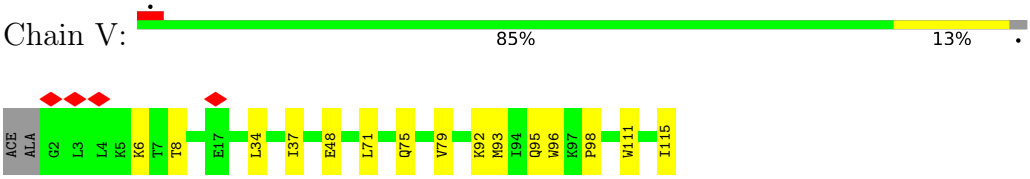
• Molecule 20: Acyl carrier protein, mitochondrial

Chain U:



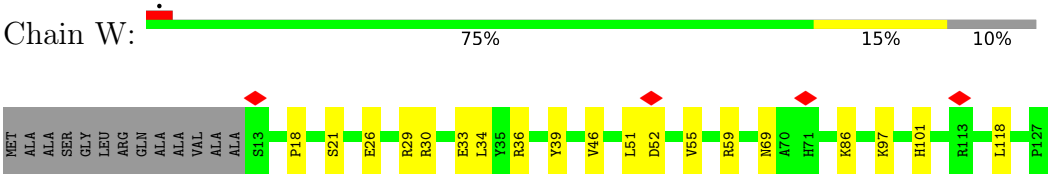
• Molecule 21: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 5

Chain V:



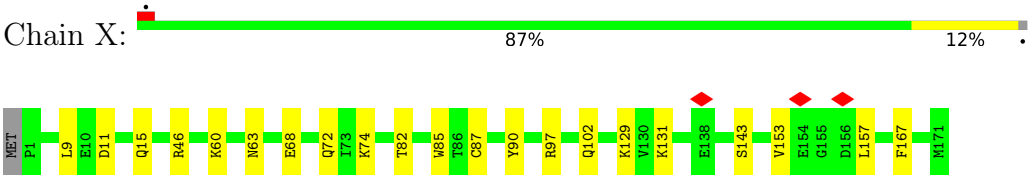
• Molecule 22: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 6

Chain W:



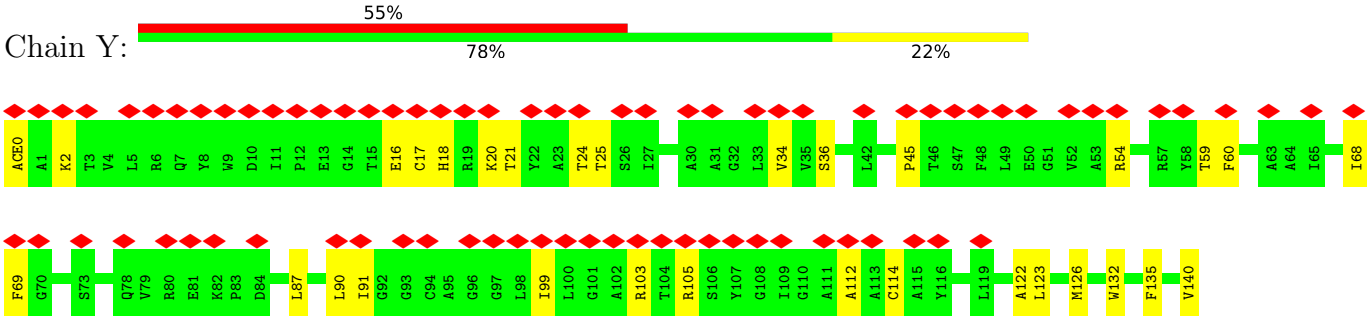
• Molecule 23: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8

Chain X:



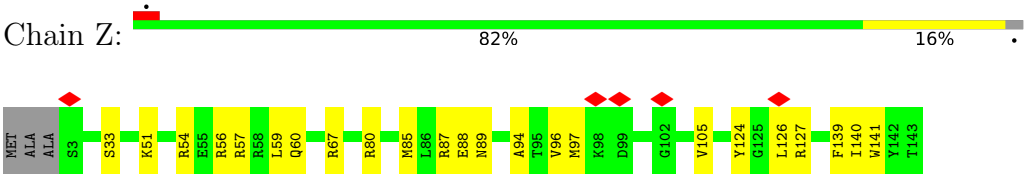
• Molecule 24: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11

Chain Y:



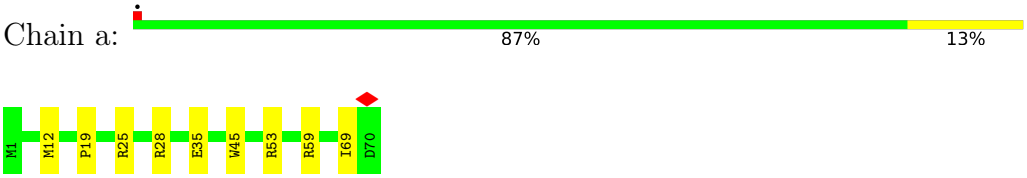
• Molecule 25: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 13

Chain Z:



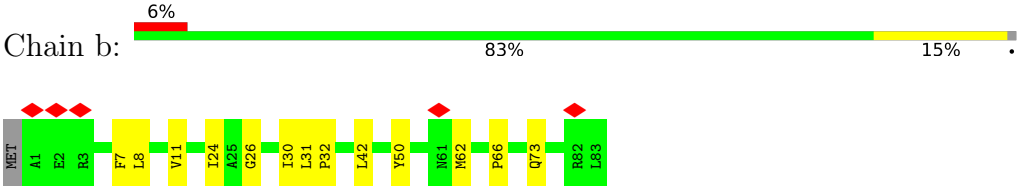
• Molecule 26: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1

Chain a:



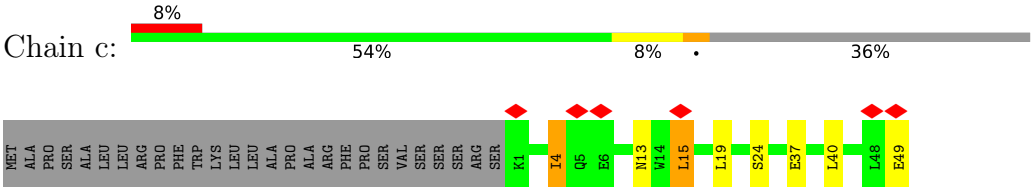
• Molecule 27: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3

Chain b:

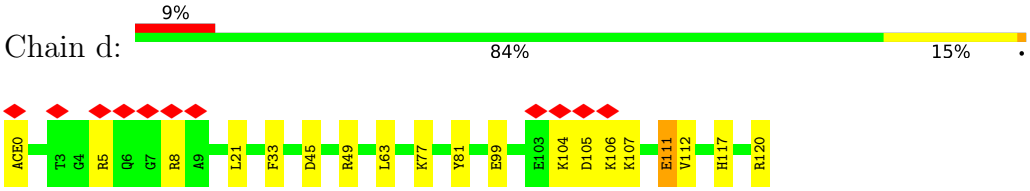


• Molecule 28: NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial

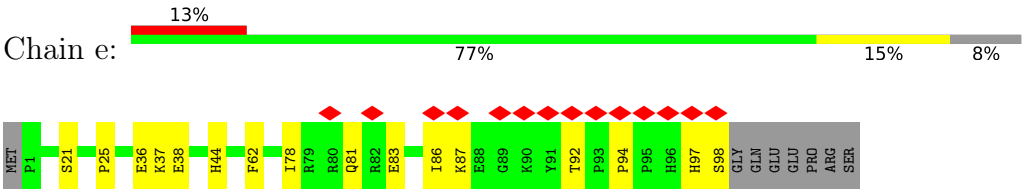
Chain c:



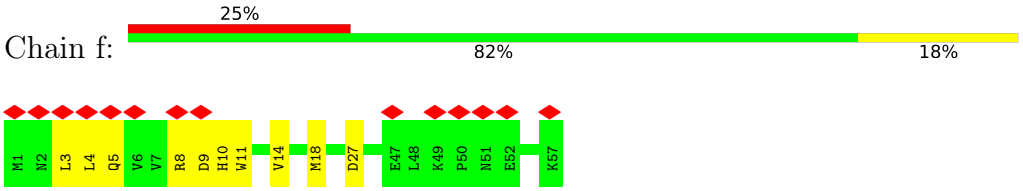
• Molecule 29: NADH dehydrogenase [ubiquinone] 1 subunit C2



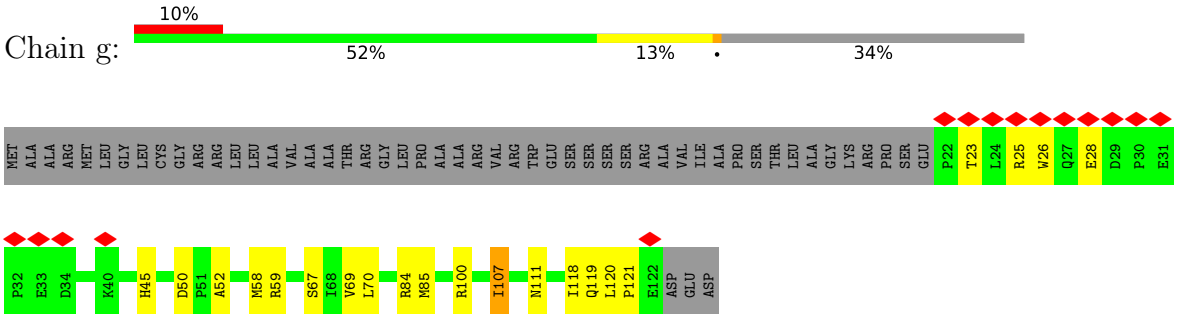
• Molecule 30: NADH dehydrogenase [ubiquinone] iron-sulfur protein 5



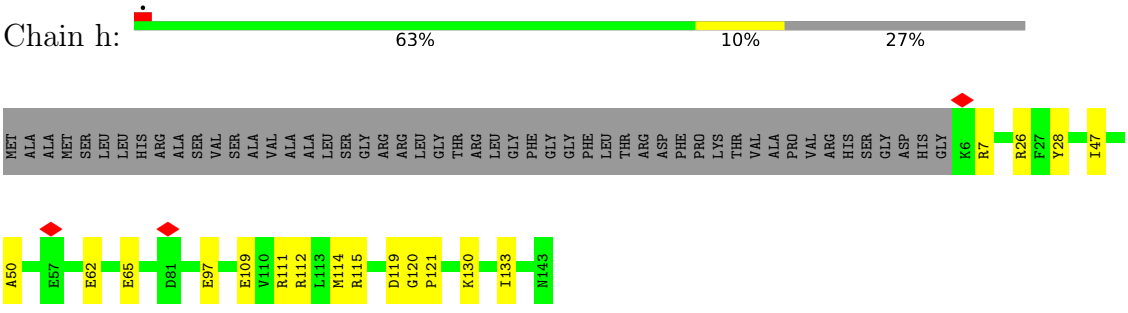
• Molecule 31: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1



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

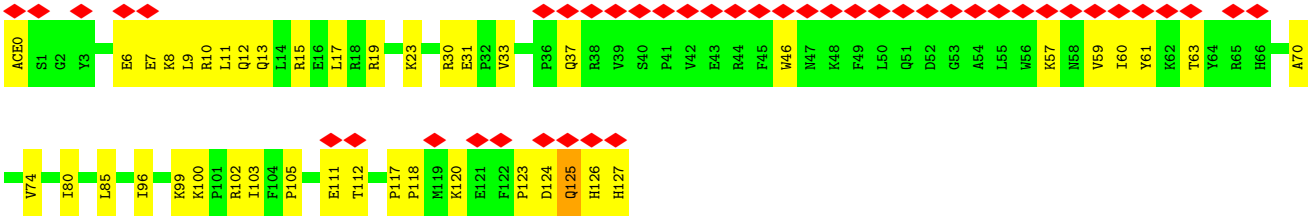


• Molecule 33: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 5, mitochondrial



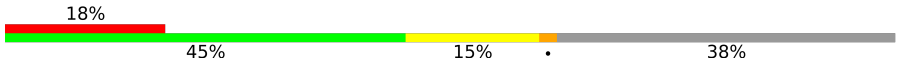
• Molecule 34: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 6

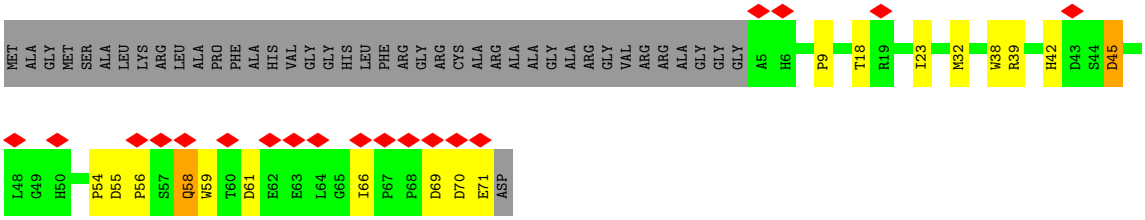




• Molecule 35: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 2, mitochondrial

Chain j:

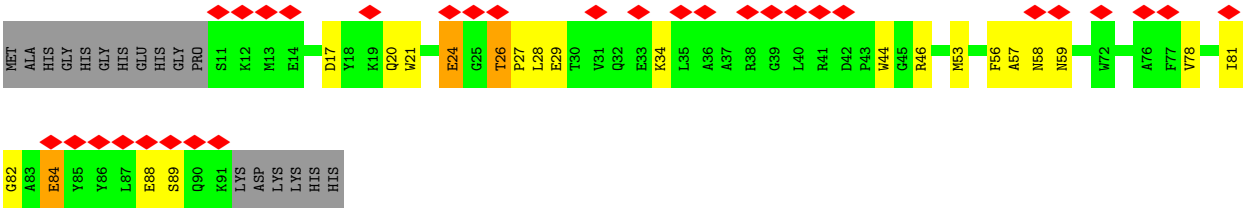




• Molecule 36: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 3

Chain k:

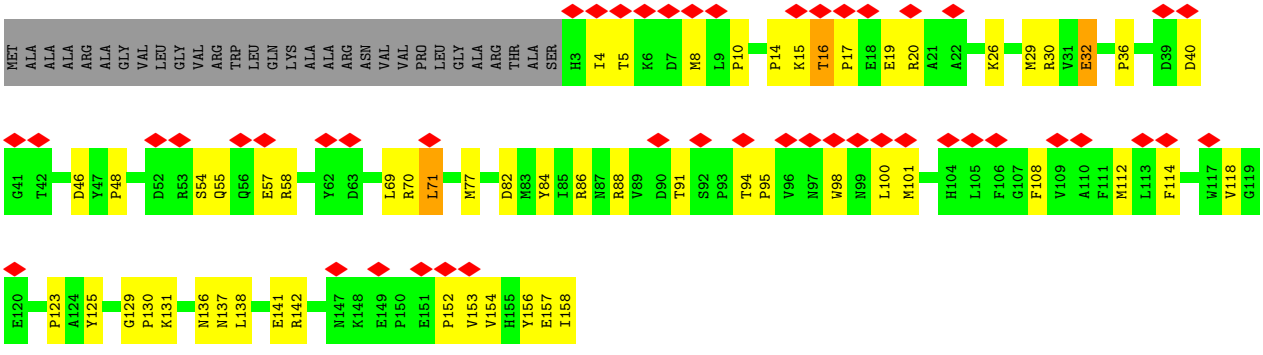




• Molecule 37: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial

Chain l:

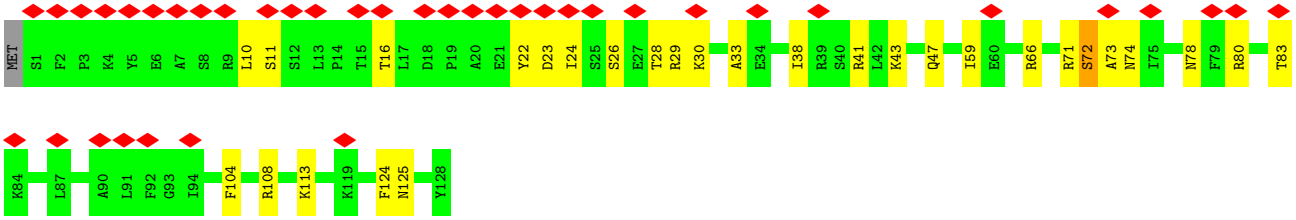




• Molecule 38: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4

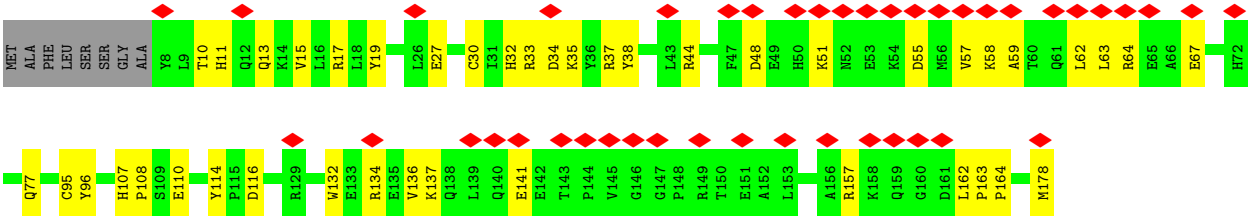
Chain m:





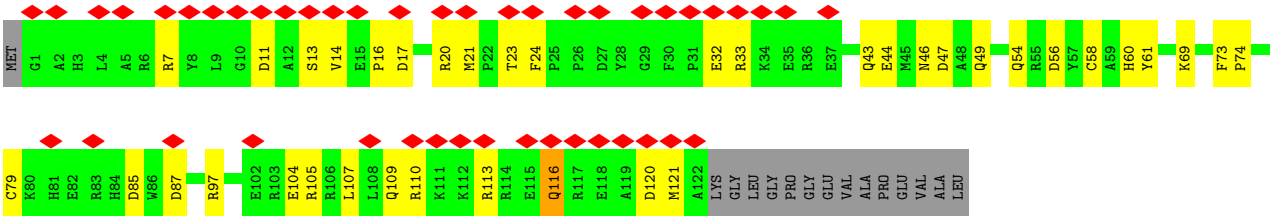
• Molecule 39: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 9



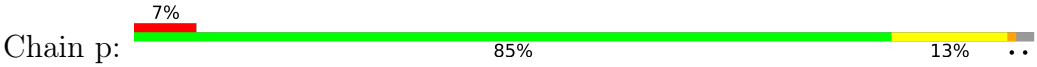


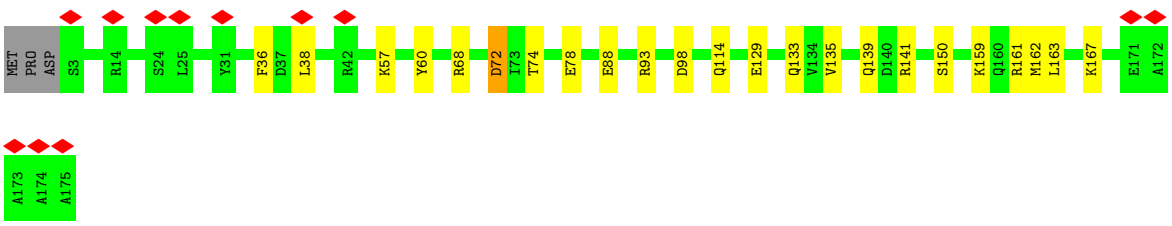
• Molecule 40: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 7



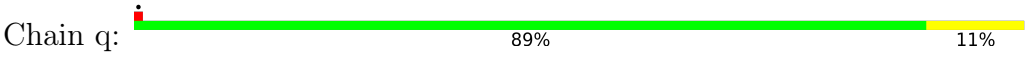


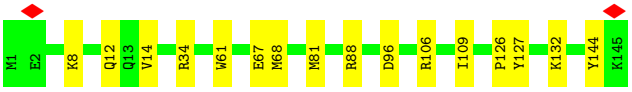
• Molecule 41: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10





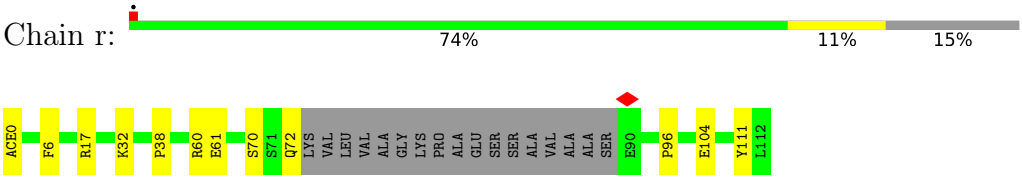
• Molecule 42: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 12





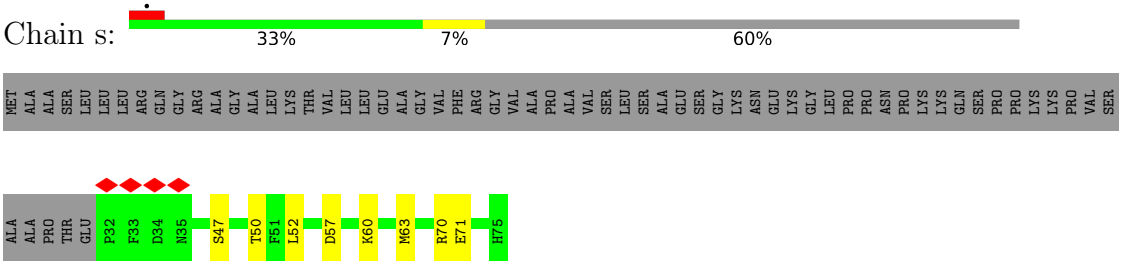
• Molecule 43: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 7

Chain r:



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

Chain s:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	128687	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION; Global and local CTF parameters were refined both in cycles in RELION then during refinement cycles in the final homogeneous refinement in cryoSPARC.	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	40.88	Depositor
Minimum defocus (nm)	900	Depositor
Maximum defocus (nm)	2300	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	1.540	Depositor
Minimum map value	-0.516	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.042	Depositor
Recommended contour level	0.25	Depositor
Map size (Å)	478.8, 478.8, 478.8	wwPDB
Map dimensions	600, 600, 600	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.798, 0.798, 0.798	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

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	0.13	0/863	0.27	0/1181
2	B	0.12	0/1266	0.28	0/1711
3	C	0.12	0/1772	0.28	0/2413
4	D	0.12	0/3514	0.26	0/4760
5	E	0.10	0/1699	0.27	0/2312
6	F	0.10	0/3401	0.27	0/4595
7	G	0.11	0/5387	0.27	0/7301
8	H	0.13	0/2505	0.34	0/3422
9	I	0.11	0/1445	0.28	0/1956
10	J	0.11	0/1370	0.30	0/1859
11	K	0.11	0/745	0.29	0/1008
12	L	0.12	0/4891	0.30	0/6652
13	M	0.11	0/3779	0.29	0/5152
14	N	0.12	0/2792	0.28	0/3800
15	O	0.09	0/2651	0.25	0/3587
16	P	0.10	0/2554	0.29	0/3458
17	Q	0.10	0/1072	0.25	0/1449
18	R	0.11	0/753	0.27	0/1014
19	S	0.10	0/702	0.29	0/945
20	T	0.10	0/700	0.31	0/944
20	U	0.13	0/719	0.37	0/971
21	V	0.10	0/943	0.26	0/1277
22	W	0.11	0/1001	0.33	0/1345
23	X	0.09	0/1439	0.24	0/1942
24	Y	0.21	1/1048 (0.1%)	0.24	0/1423
25	Z	0.10	0/1181	0.24	0/1592
26	a	0.11	0/584	0.31	0/786
27	b	0.11	0/672	0.26	0/923
28	c	0.13	0/427	0.31	0/579
29	d	0.23	1/1027 (0.1%)	0.33	0/1387
30	e	0.10	0/846	0.26	0/1131

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
31	f	0.10	0/505	0.27	0/681
32	g	0.12	0/873	0.33	0/1186
33	h	0.09	0/1188	0.23	0/1607
34	i	0.22	1/1134 (0.1%)	0.32	0/1544
35	j	0.09	0/607	0.24	0/833
36	k	0.09	0/672	0.31	0/906
37	l	0.12	0/1369	0.33	0/1873
38	m	0.10	0/1094	0.27	0/1480
39	n	0.09	0/1551	0.26	0/2099
40	o	0.10	0/1073	0.29	0/1437
41	p	0.09	0/1483	0.25	0/2000
42	q	0.11	0/1250	0.27	0/1698
43	r	0.25	1/795 (0.1%)	0.28	0/1077
44	s	0.11	0/383	0.28	0/518
All	All	0.12	4/67725 (0.0%)	0.28	0/91814

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
34	i	0	ACE	C-N	6.21	1.45	1.33
24	Y	0	ACE	C-N	6.17	1.45	1.33
29	d	0	ACE	C-N	6.14	1.45	1.33
43	r	0	ACE	C-N	6.08	1.45	1.33

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	852	0	896	26	0
2	B	1248	0	1243	15	0
3	C	1721	0	1675	18	0
4	D	3437	0	3376	42	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	E	1659	0	1664	20	0
6	F	3326	0	3282	46	0
7	G	5298	0	5316	62	0
8	H	2444	0	2557	47	0
9	I	1414	0	1370	19	0
10	J	1345	0	1352	28	0
11	K	745	0	785	12	0
12	L	4775	0	4937	81	0
13	M	3694	0	3891	73	0
14	N	2733	0	2912	47	0
15	O	2589	0	2566	34	0
16	P	2492	0	2528	28	0
17	Q	1049	0	1045	11	0
18	R	740	0	714	6	0
19	S	691	0	706	14	0
20	T	688	0	684	15	0
20	U	707	0	700	31	0
21	V	923	0	964	12	0
22	W	977	0	994	15	0
23	X	1402	0	1383	16	0
24	Y	1030	0	1041	20	0
25	Z	1152	0	1151	20	0
26	a	569	0	568	12	0
27	b	651	0	662	11	0
28	c	414	0	415	7	0
29	d	999	0	988	18	0
30	e	825	0	826	11	0
31	f	492	0	501	7	0
32	g	846	0	798	18	0
33	h	1154	0	1168	16	0
34	i	1097	0	1108	31	0
35	j	580	0	519	11	0
36	k	653	0	639	16	0
37	l	1314	0	1210	38	0
38	m	1067	0	1067	27	0
39	n	1498	0	1445	34	0
40	o	1048	0	1018	30	0
41	p	1450	0	1426	17	0
42	q	1209	0	1182	9	0
43	r	776	0	782	13	0
44	s	371	0	344	7	0
45	A	135	0	201	6	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
45	H	36	0	49	3	0
45	I	51	0	82	3	0
45	K	43	0	60	3	0
45	L	190	0	294	9	0
45	M	94	0	142	6	0
45	O	77	0	102	5	0
45	Y	115	0	158	3	0
45	Z	94	0	145	2	0
45	d	49	0	75	0	0
45	f	31	0	36	1	0
45	h	75	0	98	2	0
45	j	39	0	55	2	0
45	m	40	0	57	1	0
46	B	8	0	0	0	0
46	F	8	0	0	0	0
46	G	16	0	0	0	0
46	I	16	0	0	1	0
47	B	51	0	79	2	0
47	H	46	0	69	2	0
47	M	95	0	144	6	0
47	O	30	0	34	2	0
47	d	40	0	54	2	0
48	B	35	0	46	4	0
48	H	35	0	46	2	0
48	L	35	0	46	2	0
48	M	70	0	92	12	0
48	Y	35	0	46	2	0
48	m	35	0	46	3	0
49	E	4	0	0	0	0
49	G	4	0	0	0	0
50	F	31	0	19	2	0
51	G	1	0	0	0	0
52	L	79	0	108	6	0
52	N	85	0	117	1	0
52	X	86	0	125	10	0
52	d	65	0	77	2	0
52	h	68	0	80	2	0
52	q	64	0	72	1	0
53	O	1	0	0	0	0
54	O	31	0	12	1	0
55	P	48	0	26	4	0
56	R	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
57	T	37	0	0	2	0
57	U	37	0	0	1	0
58	o	15	0	27	0	0
59	A	18	0	0	0	0
59	B	57	0	0	0	0
59	C	95	0	0	1	0
59	D	147	0	0	4	0
59	E	29	0	0	1	0
59	F	80	0	0	4	0
59	G	220	0	0	4	0
59	H	76	0	0	4	0
59	I	89	0	0	1	0
59	J	22	0	0	0	0
59	K	17	0	0	0	0
59	L	129	0	0	5	0
59	M	120	0	0	2	0
59	N	79	0	0	2	0
59	O	35	0	0	2	0
59	P	57	0	0	3	0
59	Q	93	0	0	0	0
59	R	22	0	0	0	0
59	S	3	0	0	1	0
59	T	2	0	0	0	0
59	U	15	0	0	1	0
59	V	10	0	0	0	0
59	W	15	0	0	0	0
59	X	42	0	0	1	0
59	Y	1	0	0	0	0
59	Z	41	0	0	2	0
59	a	12	0	0	2	0
59	b	3	0	0	0	0
59	c	1	0	0	0	0
59	d	30	0	0	2	0
59	e	24	0	0	0	0
59	f	6	0	0	0	0
59	g	21	0	0	0	0
59	h	35	0	0	1	0
59	i	8	0	0	0	0
59	j	4	0	0	0	0
59	k	4	0	0	0	0
59	l	42	0	0	2	0
59	m	27	0	0	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
59	n	32	0	0	3	0
59	o	19	0	0	4	0
59	p	36	0	0	1	0
59	q	29	0	0	1	0
59	r	21	0	0	0	0
59	s	10	0	0	0	0
All	All	70303	0	69317	960	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

All (960) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:n:96:TYR:HB3	39:n:178:MET:HG3	1.64	0.80
12:L:356:ILE:HA	12:L:359:MET:HG3	1.66	0.78
37:l:8:MET:HE3	37:l:8:MET:H	1.49	0.76
4:D:328:ALA:HB3	7:G:126:ASP:HB2	1.71	0.73
4:D:49:LEU:HD21	4:D:63:ARG:HE	1.54	0.73
13:M:86:LYS:HD2	13:M:86:LYS:H	1.54	0.72
21:V:71:LEU:HD13	21:V:79:VAL:HG11	1.72	0.71
13:M:263:MET:HE1	38:m:104:PHE:HD2	1.54	0.71
52:X:201:CDL:H512	52:X:201:CDL:H351	1.73	0.70
33:h:7:ARG:NH2	34:i:31:GLU:O	2.24	0.70
29:d:120:ARG:O	38:m:108:ARG:NH2	2.24	0.70
37:l:10:PRO:HD3	38:m:66:ARG:HG2	1.74	0.70
12:L:159:TYR:HB2	13:M:416:ARG:HG2	1.74	0.69
28:c:49:GLU:OE2	28:c:49:GLU:N	2.26	0.69
7:G:284:VAL:HG12	7:G:559:VAL:HG22	1.74	0.69
43:r:104:GLU:N	43:r:104:GLU:OE2	2.21	0.69
34:i:103:ILE:HB	40:o:47:ASP:HB3	1.74	0.69
7:G:252:PRO:HG3	7:G:263:ILE:HG12	1.76	0.68
45:M:602:3PE:H322	45:O:405:3PE:H342	1.76	0.68
12:L:467:ILE:O	12:L:471:ASN:ND2	2.25	0.68
22:W:34:LEU:HD13	22:W:86:LYS:HG2	1.77	0.67
14:N:206:ILE:HD11	47:d:202:PC1:H351	1.76	0.67
19:S:19:ARG:HB2	19:S:65:TRP:HB2	1.75	0.67
20:U:25:ILE:HD11	20:U:42:LEU:HD11	1.77	0.67
19:S:18:ILE:HD11	19:S:93:VAL:HG11	1.77	0.67
32:g:119:GLN:N	32:g:119:GLN:OE1	2.28	0.67
15:O:71:VAL:HG22	15:O:76:ASN:HA	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:14:GLY:HA2	19:S:97:LYS:HD3	1.77	0.66
8:H:169:GLN:O	45:H:601:3PE:N	2.21	0.66
23:X:11:ASP:O	23:X:60:LYS:NZ	2.28	0.66
20:U:36:PHE:HB3	20:U:42:LEU:HD12	1.77	0.66
14:N:298:TYR:O	14:N:303:THR:OG1	2.11	0.66
35:j:39:ARG:HH22	45:j:101:3PE:H111	1.61	0.66
8:H:24:GLU:OE1	8:H:228:TYR:OH	2.13	0.66
48:M:606:LMT:H61	48:m:201:LMT:H22	1.77	0.66
40:o:58:CYS:SG	59:o:312:HOH:O	2.53	0.66
37:l:131:LYS:NZ	40:o:56:ASP:OD2	2.29	0.66
38:m:38:ILE:HA	38:m:41:ARG:HD3	1.77	0.66
29:d:106:LYS:HA	29:d:106:LYS:HE3	1.77	0.65
12:L:183:ILE:HG22	13:M:393:ILE:HD11	1.79	0.65
25:Z:85:MET:O	25:Z:89:ASN:ND2	2.30	0.65
4:D:67:GLU:HG2	4:D:74:ARG:HB2	1.77	0.65
13:M:343:ILE:O	13:M:346:ARG:NH1	2.28	0.65
13:M:422:HIS:HB2	38:m:59:ILE:HD12	1.78	0.65
29:d:104:LYS:HG3	29:d:106:LYS:HD2	1.78	0.65
25:Z:97:MET:HE1	30:e:81:GLN:HB3	1.77	0.65
45:A:203:3PE:H3H2	27:b:26:GLY:HA3	1.78	0.65
57:T:101:EHZ:O1	57:T:101:EHZ:O2	2.15	0.65
17:Q:125:ASN:O	44:s:70:ARG:NH1	2.30	0.65
13:M:87:GLU:O	13:M:92:LYS:NZ	2.27	0.64
33:h:114:MET:HE2	33:h:121:PRO:HD2	1.78	0.64
1:A:60:ILE:HG21	10:J:168:ILE:HG21	1.79	0.64
47:M:604:PC1:H242	48:M:606:LMT:H101	1.78	0.64
20:U:54:MET:HE2	20:U:76:ILE:HG21	1.78	0.64
8:H:317:GLN:HE22	10:J:141:MET:HE1	1.63	0.64
8:H:102:VAL:HG11	8:H:154:LEU:HD11	1.78	0.64
6:F:431:GLN:NE2	6:F:435:GLN:OE1	2.31	0.64
17:Q:11:ILE:HD13	22:W:18:PRO:HB3	1.78	0.64
1:A:47:ALA:HB3	11:K:87:THR:HG22	1.78	0.64
20:U:72:CYS:HB3	20:U:75:GLU:HG3	1.80	0.64
40:o:97:ARG:NH1	59:o:305:HOH:O	2.31	0.64
11:K:93:LEU:HB3	14:N:54:GLU:HG3	1.80	0.64
6:F:292:ASP:O	6:F:339:ARG:NH1	2.31	0.63
39:n:48:ASP:O	39:n:51:LYS:NZ	2.30	0.63
52:N:401:CDL:H161	52:N:401:CDL:H631	1.81	0.63
2:B:150:PRO:HG3	4:D:189:MET:HE2	1.81	0.63
15:O:88:SER:OG	15:O:90:ASP:OD1	2.16	0.63
34:i:30:ARG:NH2	39:n:116:ASP:OD1	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:U:49:GLU:OE2	39:n:19:TYR:OH	2.14	0.63
38:m:22:TYR:OH	39:n:67:GLU:OE1	2.17	0.63
3:C:8:ARG:NH2	43:r:61:GLU:OE2	2.27	0.63
6:F:99:GLU:O	6:F:139:ARG:NH1	2.32	0.63
12:L:485:TYR:O	12:L:489:THR:OG1	2.15	0.63
55:P:501:NDP:N7N	55:P:501:NDP:O2N	2.32	0.63
41:p:72:ASP:OD1	41:p:74:THR:OG1	2.17	0.63
5:E:79:ARG:NH1	5:E:82:GLU:OE2	2.31	0.62
23:X:129:LYS:NZ	27:b:62:MET:O	2.32	0.62
43:r:17:ARG:HH11	43:r:17:ARG:HG3	1.63	0.62
1:A:68:GLU:HG2	10:J:161:LEU:HD13	1.82	0.62
14:N:252:GLY:HA3	14:N:290:LEU:HD13	1.81	0.62
23:X:63:ASN:OD1	25:Z:80:ARG:NH2	2.31	0.62
1:A:25:PRO:HG2	8:H:60:PRO:HG3	1.81	0.62
25:Z:88:GLU:OE1	25:Z:127:ARG:NH2	2.31	0.62
29:d:45:ASP:OD1	29:d:49:ARG:NH1	2.33	0.62
20:U:11:ILE:HD13	20:U:80:ILE:HG22	1.81	0.62
2:B:69:MET:HE2	2:B:76:PHE:HA	1.80	0.62
10:J:167:VAL:HG22	14:N:42:PRO:HG3	1.82	0.62
12:L:433:GLY:O	36:k:59:ASN:ND2	2.31	0.62
22:W:33:GLU:OE2	22:W:33:GLU:N	2.24	0.62
20:U:1:SER:OG	20:U:2:ASP:N	2.30	0.62
4:D:117:ALA:HB2	4:D:367:ILE:HG12	1.81	0.61
13:M:341:THR:HG23	13:M:344:LEU:HB2	1.82	0.61
37:l:55:GLN:NE2	37:l:69:LEU:O	2.32	0.61
45:A:202:3PE:H122	27:b:42:LEU:HD22	1.83	0.61
7:G:329:ILE:HD13	7:G:505:LEU:HD22	1.82	0.61
39:n:27:GLU:OE2	39:n:33:ARG:NH1	2.29	0.61
32:g:121:PRO:HD2	41:p:163:LEU:HD21	1.82	0.61
8:H:77:MET:HG3	8:H:118:TRP:HZ3	1.64	0.61
39:n:107:HIS:HB3	39:n:110:GLU:HG3	1.83	0.60
7:G:114:CYS:HB3	7:G:117:GLN:HB2	1.81	0.60
13:M:57:PHE:HB3	13:M:113:MET:HE2	1.83	0.60
14:N:322:LYS:NZ	47:O:401:PC1:O14	2.32	0.60
15:O:184:GLN:HA	15:O:192:MET:HE1	1.83	0.60
4:D:116:GLN:NE2	4:D:276:ASP:OD2	2.34	0.60
7:G:437:HIS:O	7:G:440:SER:OG	2.19	0.60
8:H:99:ASN:ND2	59:H:711:HOH:O	2.35	0.60
6:F:224:ASN:ND2	50:F:501:FMN:O2	2.34	0.60
7:G:643:GLN:OE1	7:G:643:GLN:N	2.24	0.59
24:Y:87:LEU:O	24:Y:91:ILE:HD12	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:o:17:ASP:HB3	40:o:20:ARG:HB2	1.83	0.59
13:M:139:GLN:NE2	59:M:721:HOH:O	2.34	0.59
15:O:174:VAL:HG22	15:O:225:ALA:HB2	1.83	0.59
2:B:109:GLU:OE2	48:B:203:LMT:O4'	2.19	0.59
8:H:249:PRO:O	26:a:28:ARG:NH2	2.35	0.59
12:L:383:MET:HE2	12:L:383:MET:HA	1.85	0.59
20:U:34:SER:HB2	20:U:40:LEU:HD21	1.85	0.59
1:A:27:LEU:HD22	48:B:203:LMT:H12	1.85	0.59
37:l:137:ASN:O	37:l:142:ARG:NH1	2.36	0.59
32:g:111:ASN:OD1	41:p:161:ARG:NH2	2.36	0.59
7:G:382:THR:HB	7:G:454:GLY:HA3	1.85	0.59
7:G:644:GLN:N	7:G:644:GLN:OE1	2.36	0.59
19:S:83:ALA:O	19:S:87:THR:OG1	2.20	0.59
38:m:72:SER:OG	38:m:73:ALA:N	2.36	0.59
7:G:584:LYS:NZ	59:G:918:HOH:O	2.36	0.58
39:n:33:ARG:NH1	59:n:207:HOH:O	2.36	0.58
2:B:49:THR:HG21	2:B:59:MET:HE2	1.85	0.58
7:G:478:ARG:HA	7:G:483:VAL:HG11	1.85	0.58
6:F:111:ILE:HD13	6:F:138:ILE:HD12	1.86	0.58
23:X:87:CYS:SG	23:X:102:GLN:NE2	2.77	0.58
29:d:99:GLU:OE2	29:d:99:GLU:N	2.30	0.58
37:l:157:GLU:O	40:o:33:ARG:NH1	2.36	0.58
39:n:137:LYS:NZ	39:n:141:GLU:OE1	2.36	0.58
13:M:204:MET:HG3	13:M:209:LEU:HB2	1.85	0.58
12:L:49:ILE:HA	12:L:52:MET:HE2	1.84	0.58
13:M:340:ARG:HG3	13:M:340:ARG:HH11	1.66	0.58
14:N:238:PRO:O	14:N:241:THR:OG1	2.21	0.58
20:U:49:GLU:HB3	36:k:44:TRP:HE1	1.69	0.58
35:j:71:GLU:O	40:o:110:ARG:NH2	2.36	0.58
14:N:177:LYS:NZ	59:N:513:HOH:O	2.37	0.57
15:O:136:GLU:HG2	15:O:205:ALA:HB2	1.86	0.57
39:n:59:ALA:HA	39:n:62:LEU:HD12	1.86	0.57
6:F:245:PHE:HB3	6:F:271:GLU:HG3	1.85	0.57
14:N:218:MET:HE3	14:N:244:ILE:HG12	1.87	0.57
42:q:132:LYS:NZ	59:q:302:HOH:O	2.30	0.57
6:F:95:VAL:HG11	6:F:118:LEU:HD11	1.86	0.57
12:L:3:MET:HG3	41:p:36:PHE:CG	2.40	0.57
45:L:705:3PE:H2F2	45:Y:201:3PE:H351	1.87	0.57
29:d:45:ASP:OD2	52:d:203:CDL:O1	2.22	0.57
34:i:6:GLU:OE1	39:n:157:ARG:NH1	2.37	0.57
35:j:69:ASP:OD2	40:o:113:ARG:NH1	2.36	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:269:LEU:HB2	4:D:368:GLU:HB2	1.85	0.57
5:E:56:ARG:NH2	5:E:158:ASP:OD2	2.37	0.57
6:F:243:ALA:HA	6:F:251:SER:HB3	1.86	0.57
14:N:1:FME:O1	15:O:254:ARG:NH1	2.37	0.57
34:i:105:PRO:HG3	40:o:44:GLU:HG2	1.87	0.57
2:B:102:LYS:HE2	2:B:106:GLN:HE22	1.70	0.57
37:l:138:LEU:HB3	37:l:141:GLU:HB2	1.87	0.57
40:o:113:ARG:O	40:o:116:GLN:NE2	2.37	0.57
12:L:341:MET:HE3	12:L:454:ILE:HG12	1.87	0.57
14:N:241:THR:O	14:N:301:THR:OG1	2.23	0.57
26:a:28:ARG:NH1	59:a:102:HOH:O	2.38	0.57
6:F:164:LYS:HE3	44:s:63:MET:HE1	1.87	0.56
8:H:253:GLU:OE1	8:H:253:GLU:N	2.36	0.56
9:I:53:GLU:OE2	42:q:34:ARG:NH2	2.39	0.56
13:M:165:ILE:HG21	14:N:268:GLN:HA	1.87	0.56
24:Y:140:VAL:O	33:h:115:ARG:NH1	2.39	0.56
15:O:21:LYS:HE3	15:O:120:GLN:HA	1.86	0.56
12:L:116:LYS:NZ	59:L:834:HOH:O	2.38	0.56
20:T:51:ILE:HG13	20:T:67:ALA:HB1	1.86	0.56
7:G:155:GLN:NE2	59:G:922:HOH:O	2.37	0.56
12:L:297:ASP:HB3	12:L:300:LYS:HB2	1.87	0.56
52:L:702:CDL:H432	52:h:202:CDL:H362	1.88	0.56
29:d:106:LYS:HE2	41:p:78:GLU:HB2	1.87	0.56
1:A:83:ASN:ND2	45:A:201:3PE:O14	2.38	0.56
6:F:327:THR:OG1	6:F:328:GLY:N	2.29	0.56
20:U:15:VAL:HA	20:U:54:MET:HE1	1.88	0.56
30:e:37:LYS:NZ	30:e:38:GLU:OE2	2.39	0.56
38:m:16:THR:O	38:m:22:TYR:OH	2.24	0.56
42:q:106:ARG:HB2	42:q:109:ILE:HG13	1.86	0.56
6:F:194:GLU:OE1	17:Q:133:LYS:NZ	2.38	0.56
10:J:5:ILE:HG21	25:Z:141:TRP:HZ2	1.70	0.56
11:K:21:MET:HE2	45:K:101:3PE:H32	1.88	0.56
16:P:320:ARG:NH1	59:P:607:HOH:O	2.37	0.56
32:g:120:LEU:HD11	41:p:162:MET:HB3	1.87	0.56
39:n:34:ASP:OD1	39:n:35:LYS:N	2.39	0.56
4:D:236:ARG:NH2	59:D:519:HOH:O	2.38	0.55
37:l:136:ASN:HD22	37:l:152:PRO:HA	1.70	0.55
1:A:56:PHE:HB2	10:J:74:MET:HE1	1.87	0.55
15:O:200:GLN:NE2	15:O:204:ASN:OD1	2.39	0.55
34:i:17:LEU:HD11	39:n:162:LEU:HD22	1.88	0.55
15:O:97:GLN:HG2	15:O:135:LEU:HB2	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:354:GLU:OE2	4:D:357:GLN:NE2	2.38	0.55
12:L:562:LEU:HD13	48:M:605:LMT:H111	1.87	0.55
20:T:11:ILE:HG22	20:T:77:VAL:HG22	1.88	0.55
41:p:129:GLU:OE2	41:p:133:GLN:NE2	2.39	0.55
4:D:47:LEU:HD22	4:D:67:GLU:HB2	1.89	0.55
20:U:69:LYS:NZ	34:i:7:GLU:OE1	2.40	0.55
31:f:9:ASP:O	31:f:10:HIS:ND1	2.39	0.55
36:k:24:GLU:HA	36:k:29:GLU:HG2	1.87	0.55
2:B:91:THR:HA	2:B:119:CYS:HB3	1.89	0.55
20:U:35:HIS:CE1	20:U:71:MET:HB3	2.42	0.55
34:i:85:LEU:HD22	34:i:96:ILE:HD11	1.87	0.55
41:p:98:ASP:OD2	41:p:141:ARG:NH1	2.40	0.55
4:D:385:ARG:NH1	59:D:520:HOH:O	2.39	0.55
14:N:309:ASN:OD1	14:N:312:LYS:NZ	2.39	0.55
1:A:71:LEU:O	10:J:147:TYR:OH	2.18	0.54
59:U:202:HOH:O	39:n:17:ARG:NH1	2.40	0.54
3:C:77:ASP:OD1	4:D:390:LYS:NZ	2.30	0.54
7:G:372:GLU:OE1	7:G:394:ARG:NH1	2.37	0.54
39:n:30:CYS:O	39:n:32:HIS:N	2.40	0.54
7:G:294:THR:OG1	7:G:295:THR:N	2.41	0.54
8:H:253:GLU:OE2	26:a:25:ARG:NH1	2.40	0.54
10:J:170:GLU:OE1	10:J:173:ARG:NH2	2.41	0.54
13:M:260:PRO:HB3	48:m:201:LMT:H81	1.90	0.54
13:M:303:ILE:HG13	13:M:305:THR:HG23	1.89	0.54
3:C:111:THR:HB	3:C:117:ILE:HD11	1.89	0.54
4:D:352:TYR:HD1	9:I:86:VAL:HG21	1.71	0.54
8:H:24:GLU:HA	8:H:271:LEU:HD13	1.89	0.54
52:L:702:CDL:H473	52:h:202:CDL:H751	1.90	0.54
6:F:117:LYS:NZ	59:F:616:HOH:O	2.38	0.54
8:H:149:ILE:HG21	8:H:185:TRP:HB2	1.90	0.54
9:I:75:GLU:O	9:I:105:ARG:NH1	2.41	0.54
45:M:602:3PE:H3I2	14:N:335:MET:HB3	1.89	0.54
15:O:111:ALA:HB1	15:O:122:VAL:HG21	1.89	0.54
4:D:49:LEU:HD23	4:D:65:VAL:HG22	1.90	0.54
6:F:257:ASN:OD1	6:F:267:THR:OG1	2.24	0.54
7:G:579:ARG:HB2	7:G:636:VAL:HG22	1.90	0.54
8:H:64:ALA:O	8:H:124:ASN:ND2	2.41	0.54
10:J:136:PHE:HE2	27:b:50:TYR:HB3	1.71	0.54
12:L:307:SER:HA	12:L:310:LEU:HD12	1.89	0.54
13:M:220[B]:HIS:CE1	13:M:231:LEU:HD22	2.43	0.54
20:T:16:LEU:O	20:T:20:LYS:NZ	2.36	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:a:53:ARG:NH2	59:a:101:HOH:O	2.37	0.54
14:N:51:ARG:NH1	59:N:516:HOH:O	2.40	0.53
22:W:21:SER:HB2	22:W:26:GLU:HB2	1.88	0.53
15:O:21:LYS:O	15:O:23:LYS:N	2.40	0.53
20:U:25:ILE:HD12	20:U:40:LEU:HG	1.91	0.53
7:G:237:ASN:ND2	59:G:929:HOH:O	2.39	0.53
10:J:76:THR:O	10:J:78:GLN:N	2.41	0.53
13:M:105:PHE:HE1	52:X:201:CDL:H222	1.73	0.53
13:M:263:MET:HE1	38:m:104:PHE:CD2	2.41	0.53
7:G:528:ASP:OD2	7:G:545:TYR:OH	2.21	0.53
12:L:511:LEU:HD23	39:n:38:TYR:CD1	2.43	0.53
6:F:112:ARG:NH1	59:F:623:HOH:O	2.42	0.53
15:O:260:ARG:NH1	59:O:506:HOH:O	2.37	0.53
38:m:74:ASN:O	38:m:78:ASN:ND2	2.36	0.53
33:h:109:GLU:OE2	33:h:112:ARG:NH2	2.39	0.53
37:l:136:ASN:HA	37:l:153:VAL:HG22	1.91	0.53
13:M:259:TYR:O	13:M:263:MET:HG2	2.09	0.53
14:N:314:LYS:NZ	15:O:274:SER:OG	2.38	0.53
16:P:133:SER:O	55:P:501:NDP:H6N	2.09	0.53
21:V:95:GLN:N	21:V:95:GLN:OE1	2.38	0.53
15:O:285:GLY:O	15:O:289:SER:OG	2.18	0.53
16:P:129:PHE:HE1	16:P:131:HIS:HB2	1.73	0.53
11:K:33:LEU:HD21	14:N:64:SER:HB3	1.91	0.52
12:L:554:ASP:OD2	13:M:213:HIS:NE2	2.38	0.52
32:g:118:ILE:HG23	41:p:159:LYS:HE3	1.91	0.52
4:D:112:MET:HG3	4:D:181:TYR:CZ	2.44	0.52
14:N:249:LEU:HG	14:N:254:LEU:HD12	1.91	0.52
38:m:23:ASP:N	38:m:23:ASP:OD1	2.42	0.52
5:E:150:ASN:HB3	5:E:162:GLU:HB3	1.91	0.52
12:L:23:SER:HA	52:L:702:CDL:HA61	1.90	0.52
12:L:466:TYR:O	12:L:470:ASN:ND2	2.33	0.52
16:P:319:ARG:NH2	22:W:52:ASP:OD1	2.42	0.52
20:U:37:MET:HE2	20:U:71:MET:HE1	1.91	0.52
34:i:31:GLU:HG2	39:n:114:TYR:HA	1.89	0.52
13:M:403:THR:HA	13:M:406:TYR:CE2	2.45	0.52
18:R:38:ASN:HB3	18:R:43:LEU:HD11	1.91	0.52
38:m:124:PHE:HA	41:p:135:VAL:HG11	1.91	0.52
1:A:54:LYS:HD3	1:A:113:TRP:HA	1.91	0.52
22:W:33:GLU:HA	22:W:36:ARG:HB2	1.92	0.52
10:J:17:PHE:HA	10:J:20:PHE:CE2	2.45	0.52
12:L:370:THR:HG23	12:L:431:LEU:HD13	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:370:PRO:HB3	13:M:375:LEU:HD22	1.90	0.52
39:n:15:VAL:HG22	39:n:63:LEU:HD13	1.91	0.52
2:B:174:ARG:HD3	2:B:178:ARG:HH21	1.74	0.52
14:N:230:LEU:HD11	14:N:244:ILE:HD13	1.92	0.52
43:r:17:ARG:HG3	43:r:17:ARG:NH1	2.24	0.52
7:G:63:PRO:O	7:G:85:LYS:NZ	2.43	0.52
20:U:35:HIS:CE1	20:U:37:MET:HB2	2.45	0.52
1:A:49:LEU:HB3	1:A:51:PHE:HD2	1.75	0.52
12:L:525:LEU:HD11	37:l:95:PRO:HG2	1.92	0.52
12:L:567:SER:OG	48:L:704:LMT:O5'	2.28	0.52
37:l:17:PRO:HA	37:l:20:ARG:HB3	1.91	0.52
37:l:58:ARG:NH1	37:l:70:ARG:O	2.39	0.52
19:S:67:ARG:NH1	59:S:101:HOH:O	2.43	0.51
44:s:71:GLU:OE2	44:s:71:GLU:N	2.42	0.51
59:C:306:HOH:O	21:V:92:LYS:NZ	2.44	0.51
4:D:94:LYS:NZ	59:D:523:HOH:O	2.40	0.51
12:L:511:LEU:HD23	39:n:38:TYR:HD1	1.76	0.51
17:Q:28:GLU:OE2	17:Q:28:GLU:N	2.26	0.51
37:l:54:SER:HA	37:l:84:TYR:HB3	1.92	0.51
15:O:145:ARG:HH22	15:O:280:PRO:HD2	1.76	0.51
48:L:704:LMT:H91	48:M:605:LMT:H82	1.92	0.51
38:m:26:SER:C	38:m:30:LYS:HZ2	2.18	0.51
10:J:115:VAL:O	10:J:117:PHE:N	2.43	0.51
20:T:29:LYS:HE3	20:T:39:ASP:HB3	1.93	0.51
4:D:46:ASN:C	4:D:46:ASN:HD22	2.16	0.51
4:D:62:LEU:HD22	4:D:425:PHE:HZ	1.76	0.51
29:d:77:LYS:NZ	59:d:310:HOH:O	2.44	0.51
10:J:120:ASN:N	11:K:1:FME:O	2.41	0.51
59:m:305:HOH:O	39:n:64:ARG:NH1	2.43	0.51
7:G:644:GLN:NE2	19:S:37:GLU:HA	2.26	0.51
8:H:97:ASN:ND2	59:H:714:HOH:O	2.44	0.51
13:M:82:HIS:ND1	59:M:718:HOH:O	2.34	0.51
40:o:23:THR:OG1	40:o:104:GLU:OE2	2.24	0.51
4:D:58:ALA:O	4:D:60:GLY:N	2.44	0.50
8:H:287[A]:HIS:CD2	8:H:291:LYS:HD2	2.45	0.50
10:J:6:VAL:HG12	11:K:4:VAL:HG11	1.93	0.50
12:L:176:ARG:NH1	59:L:846:HOH:O	2.44	0.50
13:M:279:GLN:OE1	13:M:284:SER:OG	2.17	0.50
15:O:27:VAL:HG12	15:O:35:LYS:HB2	1.93	0.50
23:X:74:LYS:NZ	26:a:69:ILE:O	2.40	0.50
12:L:441:VAL:HG13	12:L:443:ILE:HD12	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:60:ASP:OD1	15:O:60:ASP:N	2.42	0.50
29:d:8:ARG:NH2	29:d:81:TYR:OH	2.44	0.50
12:L:296:ASN:ND2	39:n:77:GLN:OE1	2.40	0.50
20:U:12:LYS:HD2	20:U:77:VAL:HG21	1.92	0.50
24:Y:20:LYS:O	24:Y:24:THR:HG22	2.12	0.50
37:l:8:MET:HE3	37:l:8:MET:N	2.22	0.50
39:n:37:ARG:NH1	59:n:210:HOH:O	2.43	0.50
12:L:429:PHE:O	12:L:436:ARG:NH2	2.41	0.50
14:N:211:MET:HE3	14:N:251:MET:HG2	1.94	0.50
48:B:203:LMT:O6'	48:B:203:LMT:O2B	2.23	0.50
7:G:215:PHE:CG	9:I:104:ARG:HG3	2.47	0.50
8:H:317:GLN:NE2	10:J:141:MET:HE1	2.25	0.50
7:G:486:ASP:OD1	7:G:486:ASP:N	2.36	0.50
8:H:17:VAL:HG11	8:H:225:MET:HB2	1.92	0.50
12:L:418:PHE:HA	12:L:421:ILE:HD12	1.93	0.50
15:O:31:ILE:HG23	54:O:404:DGT:H3'	1.94	0.50
22:W:97:LYS:HB3	22:W:101:HIS:HB2	1.93	0.50
30:e:36:GLU:HG3	30:e:62:PHE:CZ	2.47	0.50
7:G:306:MET:HB2	7:G:521:MET:HE3	1.93	0.50
16:P:30:LEU:HD23	16:P:94:LEU:HD22	1.94	0.50
40:o:46:ASN:ND2	59:o:311:HOH:O	2.44	0.50
12:L:361:GLY:HA2	36:k:59:ASN:HD21	1.77	0.49
12:L:477:ILE:HD11	40:o:54:GLN:HA	1.94	0.49
21:V:93:MET:HG2	21:V:96:TRP:HE3	1.77	0.49
4:D:166:PRO:HB3	4:D:225:LEU:HD12	1.94	0.49
6:F:188:GLU:OE1	6:F:190:THR:OG1	2.30	0.49
10:J:118:GLU:OE2	10:J:118:GLU:HA	2.12	0.49
13:M:108:MET:HB3	13:M:121:LEU:HD13	1.94	0.49
37:l:86:ARG:NH2	59:l:219:HOH:O	2.45	0.49
8:H:87:ILE:HG12	8:H:88:PRO:HD3	1.94	0.49
34:i:8:LYS:O	34:i:12:GLN:NE2	2.45	0.49
3:C:173:GLU:HG2	3:C:188:VAL:HA	1.95	0.49
12:L:195:THR:HG21	12:L:200:GLN:HB3	1.93	0.49
16:P:237:LEU:HG	16:P:340:ILE:HD11	1.94	0.49
14:N:250:SER:OG	14:N:333:SER:O	2.23	0.49
12:L:435:PRO:HG3	36:k:56:PHE:CG	2.47	0.49
14:N:216:PHE:O	14:N:220:MET:HG3	2.12	0.49
6:F:191:ALA:HB2	6:F:203:PRO:HG3	1.93	0.49
7:G:231:MET:HB3	7:G:266:LYS:HD2	1.95	0.49
8:H:316:PRO:HG3	25:Z:56:ARG:HB3	1.95	0.49
28:c:24:SER:HB2	29:d:63:LEU:HD13	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:l:71:LEU:HD22	37:l:77:MET:HG2	1.94	0.49
43:r:70:SER:HB3	43:r:72:GLN:HG3	1.93	0.49
3:C:7:THR:OG1	3:C:8:ARG:N	2.39	0.49
9:I:84:GLU:HB2	9:I:94:ILE:HD12	1.95	0.49
12:L:223:LYS:NZ	59:L:842:HOH:O	2.41	0.49
12:L:482:MET:HG3	12:L:486:LEU:HB2	1.94	0.49
14:N:98:MET:HG2	14:N:145:ILE:HD13	1.95	0.49
16:P:32:ARG:NH1	59:P:611:HOH:O	2.43	0.49
20:T:35:HIS:CG	20:T:38:LYS:HD2	2.48	0.49
36:k:84:GLU:O	36:k:88:GLU:N	2.42	0.49
37:l:129:GLY:O	40:o:97:ARG:NH2	2.46	0.49
40:o:16:PRO:HD3	40:o:105:ARG:HG3	1.95	0.49
41:p:114:GLN:NE2	59:p:207:HOH:O	2.40	0.49
13:M:306:PRO:O	13:M:310:MET:HG3	2.13	0.49
23:X:90:TYR:OH	26:a:28:ARG:NH2	2.46	0.49
37:l:82:ASP:OD1	38:m:71:ARG:NH1	2.34	0.49
1:A:24:LEU:HD21	48:B:203:LMT:H112	1.95	0.48
1:A:104:TYR:O	1:A:108:GLN:HG2	2.13	0.48
9:I:175:TYR:CZ	43:r:38:PRO:HG3	2.48	0.48
7:G:185:THR:O	7:G:187:ILE:N	2.46	0.48
8:H:111:LEU:HD11	10:J:57:PHE:CD1	2.48	0.48
36:k:26:THR:O	36:k:28:LEU:N	2.47	0.48
1:A:49:LEU:HD21	8:H:130:ILE:HG22	1.95	0.48
4:D:62:LEU:HD13	4:D:425:PHE:CE1	2.48	0.48
37:l:14:PRO:HD3	37:l:46:ASP:HB3	1.96	0.48
40:o:24:PHE:CE2	40:o:107:LEU:HB3	2.49	0.48
14:N:277:ILE:HD11	24:Y:132:TRP:HB3	1.95	0.48
45:O:405:3PE:H322	45:O:405:3PE:H252	1.95	0.48
28:c:37:GLU:OE2	28:c:37:GLU:N	2.47	0.48
37:l:8:MET:HA	37:l:26:LYS:HG3	1.96	0.48
13:M:281:ASP:OD1	13:M:340:ARG:HB3	2.13	0.48
34:i:57:LYS:HD2	34:i:57:LYS:HA	1.67	0.48
8:H:126:LYS:HE3	10:J:78:GLN:HB3	1.95	0.48
13:M:68:LEU:HB2	47:M:603:PC1:H2G2	1.95	0.48
57:U:101:EHZ:O3	39:n:11:HIS:NE2	2.42	0.48
11:K:14:VAL:HG13	45:K:101:3PE:H372	1.95	0.48
5:E:73:LEU:O	59:E:401:HOH:O	2.20	0.48
16:P:26:ALA:HA	16:P:31:GLY:HA3	1.94	0.48
37:l:5:THR:OG1	37:l:8:MET:HE1	2.12	0.48
38:m:47:GLN:NE2	59:m:307:HOH:O	2.46	0.48
1:A:52:SER:OG	1:A:54:LYS:HG2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:30:ASP:HB3	6:F:35:GLY:HA3	1.95	0.48
6:F:140:GLY:O	6:F:179:ARG:NH2	2.39	0.48
20:U:22:TYR:HD2	20:U:25:ILE:HG12	1.78	0.48
28:c:4:ILE:HD12	28:c:4:ILE:H	1.79	0.48
40:o:60:HIS:ND1	59:o:309:HOH:O	2.34	0.48
3:C:109:THR:OG1	3:C:110:TYR:N	2.46	0.48
12:L:247:LEU:HG	12:L:252:MET:HB3	1.96	0.48
12:L:420:ALA:HB1	12:L:498:PHE:CD2	2.49	0.48
19:S:41:VAL:O	19:S:45:LYS:HG2	2.13	0.48
23:X:97:ARG:HD3	25:Z:59:LEU:HD13	1.95	0.48
24:Y:17:CYS:O	24:Y:21:THR:OG1	2.24	0.48
33:h:62:GLU:N	33:h:65:GLU:OE1	2.43	0.48
37:l:108:PHE:O	37:l:112:MET:HG2	2.14	0.48
1:A:63:LEU:HB2	10:J:67:VAL:HG21	1.96	0.47
2:B:108:PRO:HB3	8:H:61:LEU:HD22	1.96	0.47
16:P:235:ARG:NH2	16:P:291:ASP:O	2.46	0.47
34:i:9:LEU:O	34:i:13:GLN:NE2	2.44	0.47
4:D:159:LEU:HD12	4:D:164:MET:HA	1.96	0.47
13:M:216:LEU:HB3	13:M:217:PRO:HD3	1.96	0.47
45:M:602:3PE:H3E1	14:N:256:PRO:HG2	1.95	0.47
32:g:58:MET:HE3	32:g:58:MET:HB3	1.71	0.47
34:i:59:VAL:O	34:i:63:THR:N	2.47	0.47
4:D:6:PRO:HB3	4:D:10:TRP:CD1	2.48	0.47
8:H:26:LYS:NZ	59:H:715:HOH:O	2.47	0.47
29:d:8:ARG:NH1	59:d:308:HOH:O	2.41	0.47
30:e:21:SER:OG	30:e:36:GLU:OE1	2.30	0.47
9:I:11:SER:OG	9:I:13:ASP:OD1	2.29	0.47
10:J:43:ILE:HG22	11:K:46:LEU:HD11	1.95	0.47
20:T:55:GLU:OE2	20:T:62:ILE:N	2.47	0.47
20:U:21:LEU:HD21	36:k:21:TRP:HD1	1.80	0.47
47:H:603:PC1:H153	25:Z:140:ILE:HA	1.95	0.47
12:L:49:ILE:O	12:L:53:MET:HG3	2.14	0.47
13:M:36:PHE:HB2	32:g:69:VAL:HG22	1.95	0.47
13:M:425:ASN:OD1	13:M:425:ASN:N	2.44	0.47
34:i:60:ILE:HA	34:i:63:THR:HG22	1.97	0.47
45:A:201:3PE:H2F1	10:J:159:TRP:CE2	2.50	0.47
8:H:289:LEU:HA	8:H:293:PHE:HB2	1.97	0.47
28:c:4:ILE:HD12	28:c:4:ILE:N	2.29	0.47
1:A:70:ALA:HA	1:A:73:LEU:HD12	1.95	0.47
7:G:443:LEU:HB3	7:G:477:ILE:HD11	1.96	0.47
45:I:201:3PE:H3C1	27:b:24:ILE:HD11	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:42:ARG:NH1	17:Q:46:GLN:O	2.47	0.47
20:U:45:LEU:O	39:n:44:ARG:NH1	2.47	0.47
39:n:13:GLN:HB3	39:n:17:ARG:HH11	1.79	0.47
12:L:398:ALA:O	12:L:402:SER:OG	2.29	0.47
12:L:419:THR:HA	12:L:422:TYR:CE2	2.49	0.47
47:M:604:PC1:H392	47:M:604:PC1:H252	1.97	0.47
20:U:20:LYS:HG3	20:U:30:LEU:HD11	1.96	0.47
9:I:114:THR:HG21	9:I:144:HIS:CE1	2.50	0.47
12:L:442:ASN:ND2	59:L:847:HOH:O	2.46	0.47
14:N:248:LEU:HD11	14:N:296:LEU:HD23	1.96	0.47
35:j:61:ASP:HB3	35:j:66:ILE:HB	1.97	0.47
7:G:480:SER:OG	7:G:481:SER:N	2.47	0.47
7:G:627:SER:HB3	7:G:630:LEU:HG	1.96	0.47
10:J:26:PRO:HG2	10:J:76:THR:HG21	1.97	0.47
13:M:78:MET:HE1	13:M:439:LEU:HD12	1.96	0.47
14:N:152:ASN:HD22	24:Y:135:PHE:HD2	1.63	0.47
17:Q:9:GLN:HA	17:Q:9:GLN:OE1	2.14	0.47
21:V:34:LEU:HA	21:V:37:ILE:HD12	1.96	0.47
8:H:46:LEU:HD23	8:H:49:ILE:HD13	1.97	0.46
12:L:264:TYR:CD2	12:L:265:PRO:HD3	2.50	0.46
13:M:189:SER:HA	48:M:606:LMT:H1'	1.98	0.46
32:g:59:ARG:HB3	45:h:201:3PE:H252	1.96	0.46
34:i:123:PRO:O	34:i:125:GLN:N	2.48	0.46
9:I:54:LYS:NZ	9:I:138:GLU:OE2	2.48	0.46
45:K:101:3PE:H391	45:K:101:3PE:H362	1.64	0.46
24:Y:2:LYS:NZ	45:Y:201:3PE:O12	2.41	0.46
36:k:26:THR:C	36:k:28:LEU:H	2.23	0.46
37:l:57:GLU:OE2	37:l:91:THR:OG1	2.32	0.46
39:n:10:THR:N	39:n:13:GLN:OE1	2.47	0.46
12:L:332:HIS:HA	12:L:335:PHE:CZ	2.50	0.46
12:L:341:MET:HE2	12:L:457:LEU:HD12	1.97	0.46
7:G:365:ASN:ND2	59:G:914:HOH:O	2.48	0.46
16:P:238:LEU:O	16:P:242:VAL:HG23	2.15	0.46
6:F:228:VAL:O	6:F:231:SER:OG	2.29	0.46
7:G:190:MET:HB3	7:G:192:MET:HG2	1.96	0.46
8:H:306:SER:HB3	27:b:32:PRO:HG3	1.97	0.46
12:L:82:MET:HB3	12:L:87:MET:HE3	1.96	0.46
3:C:51:CYS:HB3	21:V:111:TRP:CE2	2.51	0.46
6:F:156:ALA:HA	6:F:161:LEU:HD12	1.98	0.46
6:F:409:ASP:OD1	6:F:409:ASP:N	2.49	0.46
7:G:24:THR:HG23	7:G:28:GLN:HB2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:23:ILE:O	13:M:27:SER:OG	2.28	0.46
19:S:90:LEU:O	19:S:94:LEU:HD12	2.16	0.46
20:U:1:SER:O	20:U:3:ALA:N	2.44	0.46
40:o:11:ASP:OD1	40:o:13:SER:OG	2.31	0.46
48:H:602:LMT:H51	48:H:602:LMT:H82	1.77	0.46
12:L:226:GLN:HG3	12:L:314:MET:HE3	1.97	0.46
12:L:553:LEU:HD22	45:m:202:3PE:H2H2	1.97	0.46
13:M:459:TYR:O	32:g:84:ARG:NH1	2.49	0.46
25:Z:139:PHE:HB2	26:a:45:TRP:CD1	2.51	0.46
6:F:194:GLU:OE2	6:F:204:ARG:NE	2.31	0.46
7:G:366:THR:HB	7:G:450:MET:HE3	1.97	0.46
8:H:288:LEU:O	8:H:292:ASN:HB2	2.15	0.46
12:L:598:SER:HB3	12:L:604:PHE:HD2	1.81	0.46
14:N:290:LEU:O	14:N:294:MET:HG2	2.16	0.46
16:P:160:PHE:HB3	16:P:163:ALA:HB2	1.97	0.46
7:G:644:GLN:HE21	19:S:37:GLU:HA	1.81	0.46
8:H:66:SER:HB2	10:J:79:TYR:HB2	1.96	0.46
8:H:93:TYR:OH	26:a:35:GLU:OE2	2.34	0.46
12:L:221:THR:HG23	12:L:226:GLN:HB2	1.96	0.46
23:X:68:GLU:OE2	23:X:72:GLN:NE2	2.45	0.46
37:l:29:MET:HE1	37:l:48:PRO:HB3	1.97	0.46
8:H:9:LEU:HD12	26:a:19:PRO:HB3	1.99	0.45
12:L:505:SER:O	12:L:508:THR:OG1	2.32	0.45
21:V:93:MET:SD	21:V:98:PRO:HG2	2.56	0.45
52:X:201:CDL:H361	29:d:33:PHE:HB2	1.98	0.45
6:F:291:TRP:HE1	6:F:313:GLU:CD	2.24	0.45
7:G:194:GLU:HG3	7:G:389:PRO:HB3	1.98	0.45
7:G:362:TYR:OH	7:G:504:ASP:OD1	2.27	0.45
13:M:50:LEU:HD12	13:M:50:LEU:HA	1.87	0.45
13:M:283:LYS:HB2	13:M:340:ARG:HD2	1.98	0.45
25:Z:94:ALA:HA	25:Z:105:VAL:HG21	1.98	0.45
7:G:324:ASP:CB	7:G:571:ALA:HB1	2.47	0.45
10:J:52:LEU:HD22	11:K:60:PRO:HB2	1.97	0.45
13:M:2:LEU:HB2	31:f:27:ASP:OD2	2.16	0.45
27:b:8:LEU:HD12	27:b:8:LEU:HA	1.83	0.45
36:k:78:VAL:HA	36:k:81:ILE:HD11	1.99	0.45
14:N:146:PHE:CD2	14:N:147:PRO:HD3	2.51	0.45
27:b:66:PRO:HB3	27:b:73:GLN:HB2	1.98	0.45
30:e:94:PRO:O	30:e:98:SER:OG	2.34	0.45
35:j:55:ASP:HB3	35:j:58:GLN:HB2	1.98	0.45
47:B:202:PC1:H132	47:B:202:PC1:H111	1.71	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:140:LYS:O	7:G:148:THR:OG1	2.19	0.45
7:G:329:ILE:HD11	7:G:626:VAL:HG21	1.99	0.45
9:I:50:TYR:CD1	9:I:51:PRO:HA	2.50	0.45
13:M:233:ALA:HA	13:M:320:GLY:HA2	1.99	0.45
16:P:96:GLY:O	55:P:501:NDP:H52A	2.17	0.45
25:Z:97:MET:HE3	30:e:78:ILE:HA	1.99	0.45
52:d:203:CDL:H402	52:d:203:CDL:H371	1.70	0.45
37:l:16:THR:HG23	37:l:19:GLU:HG3	1.97	0.45
6:F:425:GLU:OE2	6:F:429:ARG:NH2	2.32	0.45
7:G:488:LYS:HG2	7:G:642:PHE:CZ	2.51	0.45
12:L:349:SER:HB3	12:L:443:ILE:HA	1.97	0.45
13:M:148:TYR:HE1	48:M:605:LMT:H5'	1.81	0.45
16:P:117:ILE:HG22	16:P:129:PHE:HE2	1.81	0.45
37:l:30:ARG:NH2	37:l:32:GLU:OE1	2.49	0.45
52:L:702:CDL:H151	52:L:702:CDL:H122	1.68	0.45
13:M:271:MET:HE2	13:M:271:MET:HA	1.98	0.45
15:O:287:HIS:HB2	32:g:28:GLU:OE2	2.17	0.45
48:Y:204:LMT:H12	48:Y:204:LMT:H41	1.69	0.45
38:m:24:ILE:HG13	38:m:28:THR:HB	1.99	0.45
3:C:165:ASP:HA	17:Q:82:LEU:HD11	1.99	0.45
16:P:136:ASN:HA	16:P:292:LYS:HE2	1.97	0.45
24:Y:21:THR:O	24:Y:25:THR:OG1	2.34	0.45
29:d:5:ARG:HB3	29:d:8:ARG:HB2	1.99	0.45
37:l:130:PRO:HD3	40:o:21:MET:HE2	1.98	0.45
2:B:33:LEU:HD12	2:B:33:LEU:HA	1.84	0.45
4:D:335:ARG:NH2	9:I:129:ASP:OD1	2.42	0.45
45:O:403:3PE:H231	45:O:403:3PE:H262	1.83	0.45
34:i:102:ARG:HG2	40:o:49:GLN:HG3	1.99	0.45
3:C:137:MET:HE1	3:C:153:THR:HG23	1.98	0.45
25:Z:67:ARG:NH1	59:Z:308:HOH:O	2.45	0.45
6:F:305:PRO:HG3	6:F:413:TRP:HB3	1.99	0.44
7:G:287:GLU:CD	7:G:287:GLU:H	2.25	0.44
9:I:27:TRP:CZ2	45:I:201:3PE:H332	2.52	0.44
14:N:265:MET:HE1	23:X:167:PHE:HE2	1.82	0.44
19:S:44:LYS:NZ	19:S:50:LEU:O	2.49	0.44
19:S:63:LYS:NZ	19:S:75:ASN:OD1	2.41	0.44
21:V:8:THR:O	21:V:75:GLN:NE2	2.49	0.44
4:D:149:ASN:OD1	4:D:371:LYS:NZ	2.50	0.44
5:E:87:TYR:HB3	6:F:181:ALA:O	2.17	0.44
52:L:702:CDL:H652	45:L:703:3PE:H391	2.00	0.44
13:M:47:ASP:OD1	13:M:48:ASN:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:332:LEU:O	14:N:336:MET:HE2	2.18	0.44
47:O:401:PC1:O22	59:O:501:HOH:O	2.21	0.44
16:P:141:SER:O	16:P:147:ARG:NH1	2.38	0.44
17:Q:57:MET:HE3	17:Q:86:PHE:CE2	2.52	0.44
1:A:54:LYS:O	1:A:58:VAL:HG23	2.17	0.44
6:F:120:GLU:O	6:F:124:VAL:HG23	2.18	0.44
13:M:178:MET:HE3	13:M:178:MET:HB3	1.75	0.44
14:N:75:ILE:O	14:N:79:MET:HG3	2.17	0.44
1:A:18:VAL:HG11	8:H:72:ILE:HG23	1.99	0.44
4:D:248:GLU:CD	4:D:248:GLU:H	2.26	0.44
8:H:172:MET:O	59:H:701:HOH:O	2.21	0.44
12:L:221:THR:HG21	45:L:701:3PE:H3I3	1.98	0.44
52:L:702:CDL:H611	52:L:702:CDL:H642	1.62	0.44
48:M:605:LMT:H51	48:M:605:LMT:H81	1.77	0.44
14:N:272:LYS:HB3	24:Y:140:VAL:HG21	2.00	0.44
16:P:281:ARG:O	16:P:285:GLU:HG2	2.17	0.44
20:U:22:TYR:CD2	20:U:25:ILE:HG12	2.52	0.44
20:U:87:TYR:HE2	34:i:23:LYS:HD2	1.82	0.44
48:Y:204:LMT:H111	48:Y:204:LMT:H81	1.81	0.44
26:a:59:ARG:HH11	26:a:59:ARG:HG3	1.82	0.44
31:f:18:MET:HE2	31:f:18:MET:HB3	1.82	0.44
34:i:57:LYS:HZ1	34:i:60:ILE:HG21	1.81	0.44
7:G:496:ILE:HG22	7:G:498:SER:H	1.82	0.44
13:M:197:LEU:O	13:M:201:MET:HG2	2.17	0.44
13:M:391:ILE:HB	38:m:104:PHE:CE1	2.52	0.44
52:X:201:CDL:H351	52:X:201:CDL:H531	1.98	0.44
52:X:201:CDL:HA21	52:X:201:CDL:H522	2.00	0.44
34:i:15:ARG:O	34:i:19:ARG:HG3	2.18	0.44
7:G:41:CYS:HB3	7:G:52:CYS:HB3	2.00	0.44
7:G:199:ILE:HA	7:G:202:ILE:HG12	1.98	0.44
7:G:310:PHE:CE1	7:G:520:LYS:HD2	2.53	0.44
47:M:604:PC1:H261	48:m:201:LMT:H122	1.99	0.44
12:L:108:MET:HE3	12:L:108:MET:HB3	1.95	0.44
12:L:487:LYS:HA	12:L:487:LYS:HD2	1.81	0.44
14:N:10:LEU:HD23	14:N:10:LEU:HA	1.84	0.44
20:T:29:LYS:O	20:T:29:LYS:NZ	2.36	0.44
20:U:4:PRO:HG2	35:j:9:PRO:HG3	1.98	0.44
24:Y:60:PHE:HD1	24:Y:103:ARG:HH21	1.66	0.44
27:b:7:PHE:O	27:b:11:VAL:HG22	2.18	0.44
30:e:37:LYS:HG3	33:h:133:ILE:HG21	2.00	0.44
32:g:85:MET:HE1	41:p:93:ARG:HG2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:j:45:ASP:OD1	35:j:45:ASP:N	2.45	0.44
44:s:63:MET:HE3	44:s:63:MET:HB3	1.82	0.44
10:J:86:ASN:ND2	10:J:88:ALA:H	2.16	0.44
13:M:6:ILE:HG12	52:X:201:CDL:H652	2.00	0.44
19:S:25:ARG:HG3	19:S:25:ARG:HH11	1.83	0.44
23:X:46:ARG:HA	23:X:46:ARG:HD2	1.74	0.44
24:Y:68:ILE:HD12	24:Y:68:ILE:HA	1.87	0.44
35:j:38:TRP:O	35:j:42:HIS:ND1	2.45	0.44
3:C:137:MET:HB3	3:C:162:PHE:HB2	1.99	0.44
6:F:306:LEU:HD23	6:F:347:ILE:HD11	1.99	0.44
9:I:81:LYS:N	46:I:203:SF4:S1	2.82	0.44
13:M:76:MET:SD	13:M:230:VAL:HB	2.58	0.44
14:N:248:LEU:HD23	14:N:248:LEU:HA	1.71	0.44
20:U:50:ILE:O	20:U:54:MET:HG2	2.18	0.44
22:W:118:LEU:HD23	22:W:118:LEU:HA	1.83	0.44
25:Z:57:ARG:HD2	25:Z:57:ARG:HA	1.77	0.44
26:a:59:ARG:HG3	26:a:59:ARG:NH1	2.33	0.44
4:D:146:ARG:NH1	59:D:526:HOH:O	2.43	0.43
7:G:640:ASN:OD1	7:G:640:ASN:N	2.51	0.43
12:L:49:ILE:HB	12:L:50:PRO:HD3	1.99	0.43
12:L:223:LYS:HB2	12:L:223:LYS:HE2	1.84	0.43
16:P:132:ILE:HD13	16:P:166:ILE:HB	2.00	0.43
47:d:202:PC1:H352	47:d:202:PC1:H382	1.79	0.43
38:m:104:PHE:O	38:m:108:ARG:HG3	2.18	0.43
8:H:77:MET:HG3	8:H:118:TRP:CZ3	2.51	0.43
12:L:563:PRO:HA	48:M:605:LMT:H61	2.00	0.43
15:O:104:ARG:NE	15:O:131:ASP:OD1	2.51	0.43
16:P:91:VAL:HG23	16:P:126:VAL:HG11	1.99	0.43
20:T:52:MET:HA	20:T:55:GLU:HG3	1.99	0.43
30:e:83:GLU:O	30:e:87:LYS:N	2.42	0.43
1:A:84:LEU:HD23	1:A:84:LEU:HA	1.86	0.43
6:F:90:PRO:O	6:F:218:CYS:HB3	2.19	0.43
6:F:318:ASP:HA	6:F:329:LEU:HD22	2.00	0.43
8:H:8:MET:HE2	8:H:8:MET:HA	1.99	0.43
11:K:55:LEU:HG	30:e:25:PRO:HD3	2.00	0.43
14:N:68:MET:HE2	14:N:68:MET:HA	1.99	0.43
37:l:98:TRP:HA	37:l:101:MET:HB2	2.00	0.43
38:m:24:ILE:HD13	38:m:29:ARG:HH21	1.81	0.43
5:E:156:ILE:HB	5:E:161:TYR:HE2	1.84	0.43
6:F:157:TYR:OH	6:F:174:ASP:OD1	2.31	0.43
12:L:43:ALA:HA	12:L:46:THR:HG22	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:393:ASP:OD1	12:L:394:LEU:N	2.52	0.43
13:M:294:MET:HE2	13:M:294:MET:HA	2.00	0.43
16:P:293:ILE:HG22	16:P:295:PRO:HD3	2.00	0.43
31:f:5:GLN:HA	31:f:8:ARG:HB3	2.01	0.43
32:g:67:SER:OG	33:h:28:TYR:O	2.24	0.43
34:i:105:PRO:HB3	34:i:118:PRO:HA	2.00	0.43
37:l:125:TYR:OH	40:o:7:ARG:NH1	2.48	0.43
3:C:25:PHE:CE1	43:r:96:PRO:HD3	2.53	0.43
6:F:437:HIS:O	6:F:438:GLN:NE2	2.52	0.43
7:G:20:VAL:HG12	7:G:32:LYS:HD3	2.00	0.43
7:G:516:LYS:HE2	7:G:516:LYS:HB2	1.84	0.43
14:N:289:ASN:HA	14:N:292:PHE:CE2	2.53	0.43
20:U:23:ASP:OD1	36:k:46:ARG:NH2	2.49	0.43
34:i:100:LYS:O	40:o:49:GLN:NE2	2.51	0.43
37:l:114:PHE:O	37:l:118:VAL:HG23	2.19	0.43
3:C:65:ARG:O	3:C:73:LYS:NZ	2.46	0.43
47:M:604:PC1:H2B2	47:M:604:PC1:H281	1.83	0.43
15:O:66:GLY:N	28:c:4:ILE:HD11	2.34	0.43
15:O:80:GLU:OE1	15:O:190:HIS:ND1	2.51	0.43
45:O:405:3PE:H3B1	45:O:405:3PE:H2C2	2.00	0.43
52:X:201:CDL:H602	52:X:201:CDL:H261	2.00	0.43
27:b:26:GLY:O	27:b:30:ILE:HD12	2.18	0.43
45:A:203:3PE:H3B1	45:A:203:3PE:H3E2	1.86	0.43
10:J:56:VAL:O	10:J:60:TYR:HB3	2.18	0.43
15:O:181:SER:O	15:O:185:LYS:NZ	2.40	0.43
16:P:316:GLU:HB2	22:W:52:ASP:OD2	2.18	0.43
18:R:37:GLU:OE1	18:R:37:GLU:HA	2.19	0.43
26:a:25:ARG:HD2	26:a:25:ARG:HA	1.78	0.43
29:d:105:ASP:OD1	29:d:105:ASP:N	2.51	0.43
2:B:25:ARG:HG2	2:B:27:GLU:H	1.82	0.43
5:E:163:ASP:HB3	5:E:188:SER:HB3	2.00	0.43
8:H:222:LEU:HD23	8:H:225:MET:HE2	1.99	0.43
18:R:94:GLN:O	18:R:96:HIS:N	2.51	0.43
23:X:131:LYS:HB2	23:X:131:LYS:HE3	1.69	0.43
24:Y:45:PRO:HG3	24:Y:54:ARG:HH21	1.83	0.43
24:Y:105:ARG:HD3	24:Y:105:ARG:HA	1.79	0.43
25:Z:96:VAL:HG12	25:Z:97:MET:HE2	2.00	0.43
40:o:14:VAL:HG22	40:o:109:GLN:HG2	2.00	0.43
41:p:167:LYS:HE3	41:p:167:LYS:HB3	1.91	0.43
5:E:153:MET:HE2	5:E:153:MET:HB2	1.89	0.43
12:L:20:MET:HE2	12:L:20:MET:HB2	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:k:34:LYS:HE2	36:k:34:LYS:HB2	1.86	0.43
36:k:81:ILE:HD12	36:k:82:GLY:N	2.33	0.43
39:n:107:HIS:CD2	39:n:108:PRO:HD2	2.54	0.43
44:s:47:SER:N	44:s:50:THR:OG1	2.49	0.43
4:D:111:MET:HE2	4:D:111:MET:HB2	1.90	0.43
5:E:123:LYS:HD3	5:E:170:GLU:HG2	1.99	0.43
8:H:179:TRP:CG	8:H:180:PRO:HD3	2.54	0.43
12:L:3:MET:HE2	12:L:3:MET:HB3	1.90	0.43
13:M:144:ASN:HB3	48:M:605:LMT:O6'	2.19	0.43
13:M:278:ARG:NE	37:l:82:ASP:OD2	2.42	0.43
14:N:250:SER:O	14:N:259:GLY:HA3	2.19	0.43
22:W:30:ARG:HA	22:W:33:GLU:OE1	2.19	0.43
43:r:32:LYS:HB3	43:r:32:LYS:HE3	1.90	0.43
1:A:96:ILE:HD12	45:A:202:3PE:H2B1	2.00	0.42
2:B:49:THR:HB	4:D:57:ALA:HB2	2.00	0.42
4:D:155:THR:HB	4:D:167:PHE:HA	2.01	0.42
6:F:131:ALA:O	6:F:171:TYR:OH	2.31	0.42
6:F:420:ARG:NH1	59:F:632:HOH:O	2.51	0.42
16:P:92:ILE:HD11	16:P:218:ILE:HD11	2.01	0.42
17:Q:54:LYS:NZ	21:V:115:ILE:O	2.51	0.42
20:T:16:LEU:O	20:T:20:LYS:HG2	2.18	0.42
20:T:43:ASP:OD1	20:T:46:ASP:N	2.47	0.42
24:Y:87:LEU:O	24:Y:90:LEU:N	2.46	0.42
25:Z:51:LYS:HA	25:Z:51:LYS:HD2	1.90	0.42
36:k:58:ASN:OD1	36:k:58:ASN:N	2.42	0.42
7:G:316:ALA:HB3	7:G:519:PRO:HG3	2.01	0.42
8:H:172:MET:HE2	8:H:172:MET:HB3	1.83	0.42
13:M:178:MET:HG3	33:h:97:GLU:HB3	2.00	0.42
48:M:605:LMT:H52	48:M:605:LMT:H21	1.38	0.42
14:N:183:SER:O	14:N:187:MET:HG2	2.19	0.42
14:N:190:MET:HE2	14:N:190:MET:HB3	1.82	0.42
15:O:189:PRO:HA	15:O:192:MET:HG2	2.02	0.42
24:Y:69:PHE:CD2	45:Y:202:3PE:H2E1	2.55	0.42
25:Z:85:MET:HE1	25:Z:124:TYR:CZ	2.54	0.42
31:f:11:TRP:O	31:f:14:VAL:HG22	2.19	0.42
32:g:70:LEU:HD12	32:g:70:LEU:HA	1.83	0.42
38:m:113:LYS:HE2	38:m:113:LYS:HB2	1.68	0.42
3:C:51:CYS:HB3	21:V:111:TRP:CZ2	2.54	0.42
7:G:517:ASN:OD1	7:G:517:ASN:N	2.52	0.42
16:P:95:VAL:O	59:P:601:HOH:O	2.21	0.42
18:R:55:ARG:HG2	18:R:76:ASP:OD1	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:U:22:TYR:OH	20:U:46:ASP:OD1	2.36	0.42
33:h:50:ALA:HB2	41:p:60:TYR:CE2	2.54	0.42
11:K:4:VAL:O	11:K:8:ILE:HG12	2.19	0.42
12:L:599:MET:HG2	12:L:605:HIS:ND1	2.34	0.42
14:N:228:LEU:HD23	14:N:228:LEU:HA	1.81	0.42
33:h:47:ILE:HD13	45:h:203:3PE:H222	2.01	0.42
34:i:37:GLN:H	34:i:37:GLN:HG3	1.63	0.42
36:k:17:ASP:O	36:k:20:GLN:HG2	2.20	0.42
38:m:43:LYS:O	38:m:47:GLN:HG3	2.20	0.42
44:s:57:ASP:OD2	44:s:60:LYS:NZ	2.53	0.42
1:A:94:LEU:HD23	1:A:94:LEU:HA	1.87	0.42
2:B:109:GLU:OE1	16:P:54:TYR:OH	2.27	0.42
8:H:123:SER:C	8:H:125:SER:H	2.26	0.42
45:H:601:3PE:H292	45:Z:201:3PE:H2I2	2.00	0.42
12:L:535:ARG:HB3	38:m:10:LEU:HD13	2.02	0.42
45:L:701:3PE:H31	45:L:701:3PE:H222	2.01	0.42
22:W:46:VAL:HA	22:W:51:LEU:HD12	2.02	0.42
23:X:9:LEU:HG	25:Z:87:ARG:HG2	2.02	0.42
39:n:132:TRP:O	39:n:136:VAL:HG12	2.20	0.42
40:o:73:PHE:CD1	40:o:74:PRO:HA	2.54	0.42
5:E:209:PRO:HA	6:F:40:GLY:HA2	2.02	0.42
7:G:227:SER:OG	7:G:228:ILE:N	2.50	0.42
14:N:247:THR:O	14:N:251:MET:HG3	2.19	0.42
16:P:96:GLY:O	55:P:501:NDP:H8A	2.20	0.42
18:R:3:ARG:HG2	18:R:4:THR:N	2.35	0.42
45:Z:201:3PE:H362	45:Z:201:3PE:H391	1.57	0.42
34:i:11:LEU:HD23	34:i:15:ARG:HH22	1.85	0.42
37:l:4:ILE:HG23	37:l:8:MET:SD	2.60	0.42
1:A:54:LYS:NZ	1:A:114:THR:O	2.52	0.42
7:G:431:ASP:OD1	7:G:431:ASP:N	2.52	0.42
12:L:571:MET:HE2	12:L:571:MET:HB3	1.86	0.42
12:L:597:ILE:HD13	24:Y:34:VAL:HG22	2.02	0.42
45:O:405:3PE:H2A2	45:O:405:3PE:H2D1	1.82	0.42
16:P:164:THR:OG1	16:P:223:ALA:O	2.25	0.42
24:Y:122:ALA:O	24:Y:126:MET:HG3	2.19	0.42
4:D:71:GLU:OE2	8:H:134:ARG:NH2	2.53	0.42
5:E:4:GLY:O	5:E:92:ARG:NH2	2.52	0.42
6:F:355:LYS:NZ	59:F:610:HOH:O	2.35	0.42
12:L:375:VAL:HG22	35:j:32:MET:SD	2.59	0.42
13:M:218[B]:LYS:O	13:M:222[B]:GLU:HG2	2.19	0.42
13:M:391:ILE:HB	38:m:104:PHE:HE1	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:M:604:PC1:H133	48:M:606:LMT:H21	2.02	0.42
15:O:178:GLU:O	15:O:181:SER:OG	2.28	0.42
37:l:15:LYS:HE2	37:l:15:LYS:HB2	1.59	0.42
40:o:121:MET:N	40:o:121:MET:SD	2.92	0.42
1:A:21:ALA:HB1	8:H:218:GLY:HA3	2.02	0.42
4:D:62:LEU:HD13	4:D:425:PHE:CZ	2.55	0.42
5:E:144:CYS:SG	6:F:102:PRO:HA	2.60	0.42
7:G:122:MET:HA	43:r:60:ARG:HH22	1.84	0.42
8:H:312:SER:HB3	25:Z:54:ARG:HH21	1.84	0.42
9:I:164:GLU:HG3	42:q:88:ARG:HD3	2.01	0.42
12:L:193:LEU:HB3	12:L:204:LEU:HD12	2.01	0.42
12:L:389:PHE:N	59:L:855:HOH:O	2.52	0.42
12:L:566:ILE:HG12	45:L:706:3PE:H2B2	2.02	0.42
13:M:154:LEU:HD11	14:N:254:LEU:HD21	2.01	0.42
13:M:258:ALA:O	13:M:262:ILE:HG13	2.20	0.42
20:T:7:THR:HG23	20:T:10:GLY:H	1.85	0.42
28:c:15:LEU:HD13	28:c:19:LEU:HD11	2.02	0.42
30:e:44:HIS:CD2	33:h:130:LYS:H	2.38	0.42
32:g:50:ASP:OD1	32:g:52:ALA:N	2.53	0.42
37:l:156:TYR:O	59:l:201:HOH:O	2.21	0.42
5:E:106:THR:O	5:E:110:LEU:HG	2.20	0.42
47:H:603:PC1:H152	47:H:603:PC1:H111	1.79	0.42
15:O:69:LEU:HD22	15:O:299:LEU:HD13	2.01	0.42
21:V:34:LEU:HD13	21:V:48:GLU:HG3	2.01	0.42
37:l:58:ARG:HH12	37:l:71:LEU:HA	1.84	0.42
4:D:3:GLN:NE2	13:M:135:ARG:O	2.28	0.41
6:F:300:GLY:HA3	6:F:329:LEU:O	2.19	0.41
7:G:58:GLU:OE1	7:G:83:SER:OG	2.24	0.41
10:J:102:PHE:O	10:J:106:TYR:HB2	2.20	0.41
12:L:65:ASN:OD1	12:L:65:ASN:N	2.42	0.41
12:L:304:PHE:CZ	12:L:526:LEU:HD22	2.55	0.41
12:L:373:LEU:HD12	12:L:431:LEU:HD11	2.02	0.41
13:M:84:LEU:O	13:M:92:LYS:HE3	2.20	0.41
13:M:105:PHE:O	13:M:109:THR:OG1	2.27	0.41
14:N:100:MET:O	14:N:104:MET:HG3	2.20	0.41
23:X:82:THR:HA	23:X:85:TRP:CD1	2.54	0.41
31:f:8:ARG:HE	45:f:101:3PE:H222	1.85	0.41
38:m:125:ASN:O	41:p:139:GLN:NE2	2.45	0.41
39:n:13:GLN:HB3	39:n:17:ARG:NH1	2.35	0.41
1:A:27:LEU:HD21	2:B:173:LEU:HD23	2.01	0.41
7:G:143:GLY:HA2	7:G:190:MET:HG2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:255:HIS:CE1	7:G:257:ASP:HB2	2.55	0.41
7:G:366:THR:O	7:G:367:THR:OG1	2.35	0.41
12:L:23:SER:O	33:h:26:ARG:NE	2.53	0.41
12:L:413:LEU:HD23	12:L:413:LEU:HA	1.90	0.41
13:M:5:ILE:HG23	13:M:104:LEU:HD11	2.02	0.41
15:O:165:PRO:HB2	15:O:218:CYS:SG	2.61	0.41
20:U:51:ILE:O	20:U:55:GLU:HG3	2.20	0.41
29:d:107:LYS:HB2	29:d:111:GLU:HG3	2.02	0.41
34:i:10:ARG:NH2	39:n:164:PRO:O	2.44	0.41
34:i:46:TRP:HB3	34:i:61:TYR:HE2	1.85	0.41
45:j:101:3PE:H31	45:j:101:3PE:H321	1.83	0.41
3:C:8:ARG:HH22	43:r:61:GLU:CD	2.21	0.41
4:D:341:SER:HB3	7:G:128:SER:HB3	2.03	0.41
13:M:166:TYR:CD2	45:M:601:3PE:H242	2.54	0.41
15:O:279:LEU:O	15:O:283:THR:OG1	2.23	0.41
18:R:34:GLU:O	42:q:127:TYR:OH	2.32	0.41
23:X:157:LEU:HG	29:d:21:LEU:HD21	2.02	0.41
27:b:31:LEU:HD23	27:b:31:LEU:HA	1.92	0.41
34:i:111:GLU:HG2	34:i:112:THR:H	1.85	0.41
6:F:43:TYR:OH	6:F:44:LYS:NZ	2.51	0.41
13:M:379:LEU:O	13:M:383:MET:HG2	2.20	0.41
57:T:101:EHZ:N1	22:W:69:ASN:O	2.53	0.41
38:m:30:LYS:HA	38:m:33:ALA:HB3	2.02	0.41
5:E:4:GLY:HA3	5:E:93:LYS:HD3	2.02	0.41
5:E:164:LEU:HD13	5:E:169:ILE:HD13	2.02	0.41
9:I:7:LEU:HD23	43:r:111:TYR:HE1	1.85	0.41
9:I:143:THR:OG1	9:I:146:GLU:OE2	2.30	0.41
16:P:133:SER:OG	16:P:134:HIS:N	2.51	0.41
32:g:100:ARG:NH1	32:g:107:ILE:O	2.45	0.41
40:o:43:GLN:O	40:o:43:GLN:NE2	2.54	0.41
1:A:75:LEU:HD23	1:A:75:LEU:HA	1.89	0.41
3:C:58:ILE:HB	3:C:59:PRO:HD3	2.02	0.41
5:E:34:ILE:HD11	44:s:52:LEU:HD22	2.02	0.41
5:E:108:CYS:HA	5:E:151:ALA:HB1	2.02	0.41
7:G:196:SER:O	7:G:199:ILE:HG12	2.20	0.41
7:G:254:MET:HA	7:G:260:GLU:O	2.21	0.41
45:H:601:3PE:H2H2	45:I:201:3PE:H2C2	2.02	0.41
10:J:124:ASP:OD2	10:J:124:ASP:N	2.51	0.41
12:L:384:PRO:HA	12:L:389:PHE:CD1	2.55	0.41
13:M:271:MET:O	13:M:275:ILE:HG13	2.20	0.41
15:O:33:SER:OG	15:O:35:LYS:NZ	2.47	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:64:ASP:OD2	22:W:29:ARG:HG3	2.20	0.41
33:h:114:MET:HG2	33:h:120:GLY:HA3	2.02	0.41
37:l:158:ILE:HB	40:o:33:ARG:HH22	1.85	0.41
2:B:52:LEU:HB2	2:B:90:GLY:HA3	2.02	0.41
3:C:137:MET:HE2	3:C:137:MET:HA	2.02	0.41
4:D:227:GLU:OE2	43:r:17:ARG:NH2	2.40	0.41
5:E:127:LYS:N	5:E:130:GLU:OE1	2.42	0.41
6:F:46:LYS:HE2	6:F:46:LYS:HB3	1.92	0.41
7:G:331:LEU:HD22	7:G:525:LEU:HD22	2.03	0.41
8:H:85:MET:SD	8:H:108:MET:HB2	2.60	0.41
16:P:244:TYR:HB2	16:P:337:ALA:HB2	2.03	0.41
22:W:55:VAL:O	22:W:59:ARG:HG3	2.20	0.41
24:Y:2:LYS:HE2	24:Y:2:LYS:HB2	1.82	0.41
42:q:68:MET:SD	42:q:81:MET:HG2	2.60	0.41
3:C:161:PRO:HA	3:C:166:PHE:CD2	2.56	0.41
4:D:248:GLU:CD	4:D:248:GLU:N	2.78	0.41
12:L:565:THR:HG21	45:L:706:3PE:H362	2.03	0.41
13:M:133:ILE:HG12	13:M:223:ALA:HB2	2.03	0.41
48:M:605:LMT:H102	48:M:605:LMT:H72	1.89	0.41
15:O:209:THR:O	15:O:213:GLU:HB2	2.20	0.41
20:T:22:TYR:OH	20:T:49:GLU:OE1	2.34	0.41
20:U:70:LEU:HD12	20:U:76:ILE:HG12	2.01	0.41
23:X:97:ARG:NH2	59:X:307:HOH:O	2.37	0.41
52:X:201:CDL:HB4	52:X:201:CDL:H511	1.84	0.41
47:B:202:PC1:H3A1	8:H:53:ILE:HD11	2.02	0.41
3:C:72:PHE:O	3:C:124:TYR:OH	2.35	0.41
4:D:52:GLY:HA3	4:D:53:PRO:HD3	1.79	0.41
9:I:129:ASP:OD1	9:I:129:ASP:N	2.53	0.41
11:K:62:ILE:HG21	14:N:31:ILE:HD11	2.03	0.41
12:L:385:PHE:CD1	35:j:39:ARG:HB3	2.56	0.41
12:L:400:ASN:HA	12:L:409:LEU:HD21	2.03	0.41
13:M:231:LEU:HA	13:M:235:LEU:HB2	2.03	0.41
14:N:265:MET:HA	14:N:265:MET:HE2	2.02	0.41
15:O:113:GLU:O	15:O:117:SER:OG	2.21	0.41
31:f:4:LEU:HD12	31:f:4:LEU:HA	1.90	0.41
34:i:70:ALA:O	34:i:74:VAL:HB	2.21	0.41
34:i:117:PRO:HA	34:i:118:PRO:HD3	1.93	0.41
36:k:53:MET:HA	36:k:57:ALA:HB2	2.02	0.41
39:n:95:CYS:SG	59:n:224:HOH:O	2.63	0.41
41:p:88:GLU:OE2	41:p:150:SER:HB2	2.20	0.41
52:q:201:CDL:H552	43:r:6:PHE:HE2	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:470:ASN:O	40:o:69:LYS:NZ	2.54	0.41
13:M:218[A]:LYS:O	13:M:222[A]:GLU:HG2	2.20	0.41
13:M:252:PRO:HG3	29:d:117:HIS:CE1	2.56	0.41
19:S:44:LYS:HD2	19:S:44:LYS:HA	1.90	0.41
20:U:7:THR:HG1	20:U:10:GLY:H	1.66	0.41
34:i:126:HIS:O	34:i:127:HIS:ND1	2.53	0.41
37:l:94:THR:HG22	38:m:11:SER:OG	2.20	0.41
1:A:77:TRP:CD1	8:H:317:GLN:HE21	2.39	0.40
4:D:296:ARG:HH21	4:D:420:THR:HG21	1.86	0.40
4:D:417:ILE:O	4:D:420:THR:HG22	2.20	0.40
6:F:106:LYS:N	6:F:257:ASN:HD21	2.19	0.40
9:I:53:GLU:HG3	42:q:61:TRP:HB3	2.03	0.40
9:I:176:ARG:NH2	59:I:310:HOH:O	2.43	0.40
45:L:703:3PE:H291	34:i:80:ILE:HG23	2.04	0.40
13:M:91:ARG:HH22	15:O:290:ASP:CG	2.29	0.40
13:M:126:LEU:HD21	13:M:153:THR:HG21	2.03	0.40
45:M:602:3PE:H2G2	45:M:602:3PE:H3A2	2.03	0.40
16:P:342:THR:OG1	16:P:343:SER:N	2.54	0.40
20:T:84:LYS:HD2	20:T:84:LYS:HA	1.93	0.40
25:Z:60:GLN:NE2	59:Z:304:HOH:O	2.37	0.40
35:j:56:PRO:HA	35:j:59:TRP:CE3	2.56	0.40
39:n:55:ASP:HB3	39:n:58:LYS:HB3	2.02	0.40
42:q:8:LYS:O	42:q:12:GLN:HG2	2.20	0.40
4:D:7:ASP:HA	32:g:26:TRP:CH2	2.57	0.40
5:E:183:LYS:O	5:E:187:ARG:NH1	2.49	0.40
6:F:56:ILE:HG23	6:F:235:CYS:SG	2.61	0.40
6:F:241:TRP:O	6:F:244:SER:OG	2.38	0.40
7:G:244:THR:HB	17:Q:73:ALA:HB2	2.03	0.40
12:L:230:HIS:N	12:L:231:PRO:HD3	2.36	0.40
13:M:196:TRP:HZ2	13:M:254:THR:HG23	1.87	0.40
13:M:269:MET:O	13:M:273:SER:OG	2.40	0.40
17:Q:70:MET:SD	42:q:126:PRO:HB2	2.61	0.40
22:W:39:TYR:CE2	22:W:59:ARG:HD3	2.55	0.40
23:X:153:VAL:HG21	33:h:121:PRO:HG3	2.03	0.40
29:d:112:VAL:O	41:p:159:LYS:NZ	2.53	0.40
39:n:163:PRO:HA	39:n:164:PRO:HD3	1.95	0.40
5:E:67:ASN:O	5:E:71:GLU:HG3	2.21	0.40
50:F:501:FMN:HM81	50:F:501:FMN:HM71	1.68	0.40
12:L:17:MET:HB2	12:L:18:PRO:HD3	2.04	0.40
12:L:67:HIS:NE2	12:L:70:THR:OG1	2.50	0.40
12:L:480:MET:HE1	40:o:87:ASP:OD2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Y:16:GLU:OE2	24:Y:18:HIS:NE2	2.37	0.40
25:Z:126:LEU:HB2	30:e:97:HIS:NE2	2.36	0.40
33:h:119:ASP:OD1	33:h:119:ASP:N	2.54	0.40
40:o:61:TYR:CE2	40:o:85:ASP:HB3	2.57	0.40
2:B:54:CYS:HB3	4:D:108:TYR:HB2	2.03	0.40
6:F:231:SER:OG	6:F:232:PRO:HD3	2.20	0.40
8:H:28:LEU:HD22	8:H:275:ALA:HB2	2.02	0.40
45:L:703:3PE:H391	45:L:703:3PE:H3C1	1.85	0.40
45:L:706:3PE:H341	24:Y:112:ALA:HB2	2.03	0.40
13:M:238:LEU:HD23	13:M:238:LEU:HA	1.92	0.40
13:M:340:ARG:HG3	13:M:340:ARG:NH1	2.35	0.40
15:O:128:ILE:HD12	15:O:160:ILE:HG13	2.04	0.40
20:U:13:ASP:O	20:U:17:TYR:HB2	2.21	0.40
33:h:111:ARG:NH2	59:h:312:HOH:O	2.54	0.40
34:i:99:LYS:HB3	34:i:99:LYS:HE3	1.59	0.40
37:l:40:ASP:HA	38:m:80:ARG:HH21	1.86	0.40
39:n:38:TYR:C	39:n:38:TYR:CD2	2.98	0.40
4:D:64:LEU:HD12	4:D:64:LEU:HA	1.85	0.40
6:F:9:LYS:H	6:F:9:LYS:HG2	1.69	0.40
6:F:396:SER:HB2	6:F:412:ALA:HB1	2.03	0.40
7:G:53:ARG:O	7:G:93:VAL:HG21	2.22	0.40
7:G:194:GLU:HG2	7:G:195:LEU:HG	2.03	0.40
8:H:225:MET:SD	48:H:602:LMT:H91	2.62	0.40
13:M:198:ALA:HB2	45:M:601:3PE:H291	2.02	0.40
14:N:338:PRO:HG3	52:X:201:CDL:H192	2.03	0.40
15:O:280:PRO:HB3	32:g:25:ARG:HA	2.04	0.40
19:S:35:PHE:HZ	19:S:43:LEU:HD22	1.85	0.40
20:T:62:ILE:HG12	20:T:79:TYR:CE2	2.57	0.40
21:V:6:LYS:HE2	21:V:6:LYS:HB2	1.91	0.40
52:X:201:CDL:H552	52:X:201:CDL:H622	2.04	0.40
32:g:45:HIS:NE2	32:g:58:MET:HE2	2.37	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	102/115 (89%)	90 (88%)	11 (11%)	1 (1%)	12 24
2	B	153/216 (71%)	143 (94%)	10 (6%)	0	100 100
3	C	205/266 (77%)	199 (97%)	6 (3%)	0	100 100
4	D	422/463 (91%)	396 (94%)	24 (6%)	2 (0%)	24 43
5	E	212/249 (85%)	202 (95%)	10 (5%)	0	100 100
6	F	430/464 (93%)	406 (94%)	22 (5%)	2 (0%)	24 43
7	G	689/727 (95%)	666 (97%)	20 (3%)	3 (0%)	30 49
8	H	305/318 (96%)	286 (94%)	18 (6%)	1 (0%)	36 55
9	I	174/212 (82%)	169 (97%)	5 (3%)	0	100 100
10	J	173/175 (99%)	160 (92%)	10 (6%)	3 (2%)	7 13
11	K	96/98 (98%)	92 (96%)	4 (4%)	0	100 100
12	L	599/606 (99%)	559 (93%)	38 (6%)	2 (0%)	36 55
13	M	462/459 (101%)	453 (98%)	8 (2%)	1 (0%)	43 63
14	N	345/347 (99%)	336 (97%)	9 (3%)	0	100 100
15	O	318/343 (93%)	298 (94%)	19 (6%)	1 (0%)	36 55
16	P	307/380 (81%)	291 (95%)	13 (4%)	3 (1%)	12 24
17	Q	127/175 (73%)	124 (98%)	3 (2%)	0	100 100
18	R	94/124 (76%)	88 (94%)	5 (5%)	1 (1%)	11 22
19	S	84/99 (85%)	81 (96%)	3 (4%)	0	100 100
20	T	83/156 (53%)	81 (98%)	2 (2%)	0	100 100
20	U	86/156 (55%)	79 (92%)	7 (8%)	0	100 100
21	V	112/116 (97%)	110 (98%)	2 (2%)	0	100 100
22	W	113/128 (88%)	109 (96%)	4 (4%)	0	100 100
23	X	169/172 (98%)	161 (95%)	8 (5%)	0	100 100
24	Y	139/141 (99%)	136 (98%)	3 (2%)	0	100 100
25	Z	139/144 (96%)	135 (97%)	4 (3%)	0	100 100
26	a	68/70 (97%)	68 (100%)	0	0	100 100
27	b	81/84 (96%)	78 (96%)	3 (4%)	0	100 100
28	c	47/76 (62%)	44 (94%)	1 (2%)	2 (4%)	2 2
29	d	119/121 (98%)	118 (99%)	1 (1%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
30	e	96/106 (91%)	95 (99%)	1 (1%)	0	100 100
31	f	55/57 (96%)	50 (91%)	4 (7%)	1 (2%)	6 12
32	g	99/154 (64%)	88 (89%)	10 (10%)	1 (1%)	12 24
33	h	136/189 (72%)	134 (98%)	2 (2%)	0	100 100
34	i	126/128 (98%)	113 (90%)	10 (8%)	3 (2%)	4 8
35	j	65/108 (60%)	61 (94%)	3 (5%)	1 (2%)	8 16
36	k	79/98 (81%)	73 (92%)	5 (6%)	1 (1%)	9 18
37	l	154/186 (83%)	138 (90%)	14 (9%)	2 (1%)	9 18
38	m	126/129 (98%)	116 (92%)	9 (7%)	1 (1%)	16 31
39	n	170/179 (95%)	160 (94%)	10 (6%)	0	100 100
40	o	120/137 (88%)	112 (93%)	7 (6%)	1 (1%)	16 31
41	p	171/176 (97%)	166 (97%)	4 (2%)	1 (1%)	21 38
42	q	143/145 (99%)	140 (98%)	3 (2%)	0	100 100
43	r	92/113 (81%)	89 (97%)	3 (3%)	0	100 100
44	s	42/109 (38%)	41 (98%)	1 (2%)	0	100 100
All	All	8127/9214 (88%)	7734 (95%)	359 (4%)	34 (0%)	31 49

All (34) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
15	O	22	SER
34	i	124	ASP
4	D	59	HIS
10	J	24	PRO
13	M	344	LEU
18	R	95	HIS
40	o	32	GLU
6	F	288	THR
7	G	186	TYR
10	J	77	GLU
12	L	440	LEU
12	L	562	LEU
16	P	195	SER
31	f	3	LEU
34	i	125	GLN
7	G	651	LEU
16	P	335	GLN

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Mol	Chain	Res	Type
37	l	123	PRO
41	p	57	LYS
1	A	51	PHE
4	D	47	LEU
8	H	64	ALA
10	J	116	VAL
16	P	199	LYS
28	c	4	ILE
28	c	13	ASN
32	g	23	THR
36	k	27	PRO
38	m	72	SER
6	F	8	LYS
34	i	33	VAL
35	j	54	PRO
37	l	36	PRO
7	G	511	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	93/100 (93%)	90 (97%)	3 (3%)	34	62
2	B	131/174 (75%)	127 (97%)	4 (3%)	35	62
3	C	188/228 (82%)	188 (100%)	0	100	100
4	D	367/392 (94%)	359 (98%)	8 (2%)	45	73
5	E	183/205 (89%)	183 (100%)	0	100	100
6	F	346/368 (94%)	341 (99%)	5 (1%)	59	81
7	G	579/608 (95%)	573 (99%)	6 (1%)	68	86
8	H	266/274 (97%)	262 (98%)	4 (2%)	57	80
9	I	151/175 (86%)	147 (97%)	4 (3%)	40	68
10	J	141/141 (100%)	136 (96%)	5 (4%)	32	58
11	K	85/85 (100%)	85 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
12	L	530/533 (99%)	524 (99%)	6 (1%)	65 84
13	M	416/412 (101%)	409 (98%)	7 (2%)	53 78
14	N	315/315 (100%)	310 (98%)	5 (2%)	55 79
15	O	283/303 (93%)	279 (99%)	4 (1%)	59 81
16	P	269/327 (82%)	268 (100%)	1 (0%)	84 93
17	Q	116/153 (76%)	115 (99%)	1 (1%)	70 87
18	R	79/97 (81%)	78 (99%)	1 (1%)	61 82
19	S	76/82 (93%)	73 (96%)	3 (4%)	28 55
20	T	79/135 (58%)	74 (94%)	5 (6%)	16 34
20	U	81/135 (60%)	78 (96%)	3 (4%)	30 57
21	V	101/101 (100%)	101 (100%)	0	100 100
22	W	108/114 (95%)	108 (100%)	0	100 100
23	X	154/155 (99%)	152 (99%)	2 (1%)	61 82
24	Y	101/101 (100%)	96 (95%)	5 (5%)	22 44
25	Z	120/121 (99%)	119 (99%)	1 (1%)	73 88
26	a	59/59 (100%)	58 (98%)	1 (2%)	53 78
27	b	71/72 (99%)	71 (100%)	0	100 100
28	c	45/68 (66%)	43 (96%)	2 (4%)	25 50
29	d	106/106 (100%)	105 (99%)	1 (1%)	70 87
30	e	89/96 (93%)	87 (98%)	2 (2%)	45 73
31	f	54/54 (100%)	54 (100%)	0	100 100
32	g	92/131 (70%)	91 (99%)	1 (1%)	65 84
33	h	121/158 (77%)	121 (100%)	0	100 100
34	i	121/121 (100%)	120 (99%)	1 (1%)	73 88
35	j	61/84 (73%)	56 (92%)	5 (8%)	10 23
36	k	63/76 (83%)	59 (94%)	4 (6%)	16 34
37	l	140/159 (88%)	134 (96%)	6 (4%)	26 51
38	m	114/115 (99%)	113 (99%)	1 (1%)	70 87
39	n	157/161 (98%)	154 (98%)	3 (2%)	50 76
40	o	110/120 (92%)	107 (97%)	3 (3%)	39 67
41	p	154/157 (98%)	151 (98%)	3 (2%)	50 76

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
42	q	131/131 (100%)	127 (97%)	4 (3%)	35 62
43	r	85/96 (88%)	85 (100%)	0	100 100
44	s	43/92 (47%)	43 (100%)	0	100 100
All	All	7174/7890 (91%)	7054 (98%)	120 (2%)	54 78

All (120) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	8	LEU
1	A	35	SER
1	A	68	GLU
2	B	29	VAL
2	B	50	PHE
2	B	54	CYS
2	B	125	TYR
4	D	9	GLU
4	D	47	LEU
4	D	48	THR
4	D	49	LEU
4	D	61	VAL
4	D	62	LEU
4	D	161	ILE
4	D	420	THR
6	F	57	LEU
6	F	101	GLU
6	F	139	ARG
6	F	268	VAL
6	F	438	GLN
7	G	18	VAL
7	G	73	VAL
7	G	174	THR
7	G	190	MET
7	G	431	ASP
7	G	480	SER
8	H	70	MET
8	H	77	MET
8	H	121	TRP
8	H	130	ILE
9	I	1	THR
9	I	29	GLU
9	I	37	THR

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Mol	Chain	Res	Type
9	I	78	ILE
10	J	39	VAL
10	J	98	LEU
10	J	106	TYR
10	J	109	LYS
10	J	135	PHE
12	L	5	SER
12	L	198	LEU
12	L	203	MET
12	L	504	ILE
12	L	515	TYR
12	L	590	SER
13	M	78	MET
13	M	87	GLU
13	M	103	GLN
13	M	114	GLU
13	M	116	ILE
13	M	222[A]	GLU
13	M	222[B]	GLU
14	N	40	ILE
14	N	218	MET
14	N	284	ILE
14	N	290	LEU
14	N	336	MET
15	O	60	ASP
15	O	96	LEU
15	O	135	LEU
15	O	220	VAL
16	P	339	THR
17	Q	27	GLU
18	R	79	THR
19	S	18	ILE
19	S	77	SER
19	S	84	ASP
20	T	7	THR
20	T	40	LEU
20	T	45	LEU
20	T	65	ILE
20	T	69	LYS
20	U	7	THR
20	U	8	LEU
20	U	71	MET

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Mol	Chain	Res	Type
23	X	15	GLN
23	X	143	SER
24	Y	36	SER
24	Y	59	THR
24	Y	99	ILE
24	Y	114	CYS
24	Y	123	LEU
25	Z	33	SER
26	a	12	MET
28	c	15	LEU
28	c	40	LEU
29	d	111	GLU
30	e	86	ILE
30	e	92	THR
32	g	107	ILE
34	i	120	LYS
35	j	18	THR
35	j	23	ILE
35	j	45	ASP
35	j	58	GLN
35	j	70	ASP
36	k	24	GLU
36	k	26	THR
36	k	84	GLU
36	k	89	SER
37	l	16	THR
37	l	32	GLU
37	l	71	LEU
37	l	88	ARG
37	l	100	LEU
37	l	154	VAL
38	m	83	THR
39	n	57	VAL
39	n	134[A]	ARG
39	n	134[B]	ARG
40	o	79	CYS
40	o	116	GLN
40	o	120	ASP
41	p	38	LEU
41	p	68	ARG
41	p	72	ASP
42	q	14	VAL

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Mol	Chain	Res	Type
42	q	67	GLU
42	q	96	ASP
42	q	144	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (56) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	108	GLN
2	B	106	GLN
2	B	162	GLN
3	C	46	ASN
3	C	160	HIS
3	C	211	GLN
4	D	46	ASN
4	D	50	ASN
4	D	59	HIS
4	D	201	GLN
4	D	217	ASN
4	D	231	ASN
5	E	74	GLN
6	F	402	HIS
6	F	421	HIS
6	F	438	GLN
7	G	311	GLN
7	G	444	GLN
7	G	475	GLN
8	H	47	GLN
8	H	250	HIS
8	H	304	HIS
8	H	317	GLN
10	J	86	ASN
11	K	83	ASN
12	L	200	GLN
12	L	210	ASN
12	L	270	ASN
12	L	274	GLN
12	L	510	ASN
14	N	49	ASN
14	N	144	GLN
15	O	76	ASN
15	O	114	HIS
15	O	251	GLN

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Mol	Chain	Res	Type
15	O	288	GLN
16	P	119	GLN
19	S	30	GLN
19	S	85	GLN
20	U	74	GLN
21	V	75	GLN
23	X	34	GLN
30	e	69	GLN
31	f	5	GLN
33	h	63	HIS
33	h	143	ASN
34	i	47	ASN
34	i	58	ASN
34	i	125	GLN
37	l	104	HIS
37	l	126	GLN
37	l	136	ASN
38	m	47	GLN
41	p	58	ASN
42	q	17	HIS
42	q	112	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	WYK	B	77	2	9,11,12	2.48	2 (22%)	7,13,15	0.27	0
11	FME	K	1	11	8,9,10	1.51	1 (12%)	7,9,11	1.56	1 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
8	FME	H	1	8	8,9,10	1.51	1 (12%)	7,9,11	1.56	2 (28%)
13	FME	M	1	13	8,9,10	1.50	1 (12%)	7,9,11	1.69	1 (14%)
10	FME	J	1	10	8,9,10	1.52	1 (12%)	7,9,11	1.65	2 (28%)
14	FME	N	1	14	8,9,10	1.51	1 (12%)	7,9,11	1.61	1 (14%)
1	FME	A	1	1	8,9,10	1.51	1 (12%)	7,9,11	1.66	1 (14%)
4	2MR	D	85	4	10,12,13	2.39	2 (20%)	5,13,15	1.64	1 (20%)
12	FME	L	1	12	8,9,10	1.54	1 (12%)	7,9,11	1.47	1 (14%)

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
2	WYK	B	77	2	-	2/10/11/13	-
11	FME	K	1	11	-	3/7/9/11	-
8	FME	H	1	8	-	5/7/9/11	-
13	FME	M	1	13	-	1/7/9/11	-
10	FME	J	1	10	-	1/7/9/11	-
14	FME	N	1	14	-	3/7/9/11	-
1	FME	A	1	1	-	4/7/9/11	-
4	2MR	D	85	4	-	0/10/13/15	-
12	FME	L	1	12	-	2/7/9/11	-

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	77	WYK	CZ-NE	6.53	1.46	1.33
4	D	85	2MR	CZ-NH2	5.22	1.45	1.33
4	D	85	2MR	CZ-NE	5.05	1.45	1.34
12	L	1	FME	CN-N	3.72	1.45	1.33
11	K	1	FME	CN-N	3.69	1.45	1.33
10	J	1	FME	CN-N	3.69	1.45	1.33
8	H	1	FME	CN-N	3.69	1.45	1.33
1	A	1	FME	CN-N	3.68	1.45	1.33
14	N	1	FME	CN-N	3.65	1.45	1.33
13	M	1	FME	CN-N	3.64	1.45	1.33
2	B	77	WYK	CZ-NH2	-2.19	1.25	1.34

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	D	85	2MR	CD-NE-CZ	-2.84	118.08	123.41
1	A	1	FME	CE-SD-CG	2.71	109.71	100.40
11	K	1	FME	CE-SD-CG	2.68	109.62	100.40
13	M	1	FME	CE-SD-CG	2.67	109.58	100.40
14	N	1	FME	CE-SD-CG	2.64	109.48	100.40
8	H	1	FME	CE-SD-CG	2.64	109.45	100.40
12	L	1	FME	CE-SD-CG	2.63	109.43	100.40
10	J	1	FME	CE-SD-CG	2.53	109.10	100.40
8	H	1	FME	O1-CN-N	-2.07	119.83	125.27
10	J	1	FME	O1-CN-N	-2.05	119.88	125.27

There are no chirality outliers.

All (21) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1	FME	C-CA-CB-CG
8	H	1	FME	O1-CN-N-CA
8	H	1	FME	N-CA-CB-CG
10	J	1	FME	O1-CN-N-CA
12	L	1	FME	CA-CB-CG-SD
14	N	1	FME	CB-CA-N-CN
14	N	1	FME	CB-CG-SD-CE
2	B	77	WYK	CA-CB-CG-OH
1	A	1	FME	N-CA-CB-CG
11	K	1	FME	N-CA-CB-CG
14	N	1	FME	N-CA-CB-CG
8	H	1	FME	CB-CG-SD-CE
12	L	1	FME	CB-CG-SD-CE
1	A	1	FME	CA-CB-CG-SD
11	K	1	FME	C-CA-CB-CG
13	M	1	FME	C-CA-CB-CG
1	A	1	FME	CB-CG-SD-CE
2	B	77	WYK	CA-CB-CG-CD
8	H	1	FME	CA-CB-CG-SD
8	H	1	FME	C-CA-CB-CG
11	K	1	FME	CB-CA-N-CN

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	K	1	FME	1	0
14	N	1	FME	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 61 ligands modelled in this entry, 3 are monoatomic - leaving 58 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	$\#\|Z\| > 2$
52	CDL	d	203	-	64,64,99	1.09	7 (10%)	70,76,111	1.14	4 (5%)
45	3PE	A	201	-	46,46,50	0.90	4 (8%)	49,51,55	1.09	2 (4%)
47	PC1	B	202	-	50,50,53	1.33	6 (12%)	56,58,61	1.02	2 (3%)
48	LMT	M	605	-	36,36,36	1.15	2 (5%)	47,47,47	1.26	4 (8%)
45	3PE	d	201	-	48,48,50	0.88	4 (8%)	51,53,55	1.09	2 (3%)
47	PC1	O	401	-	29,29,53	1.49	6 (20%)	35,37,61	1.07	1 (2%)
46	SF4	I	203	9	0,12,12	-	-	-		
48	LMT	L	704	-	36,36,36	1.14	2 (5%)	47,47,47	1.09	5 (10%)
57	EHZ	U	101	20	29,36,37	1.72	5 (17%)	35,44,47	1.66	7 (20%)
45	3PE	L	706	-	44,44,50	0.92	4 (9%)	47,49,55	1.12	2 (4%)
48	LMT	m	201	-	36,36,36	1.16	2 (5%)	47,47,47	1.01	1 (2%)
45	3PE	L	705	-	50,50,50	0.86	4 (8%)	53,55,55	1.09	2 (3%)
45	3PE	Y	202	-	43,43,50	0.93	4 (9%)	46,48,55	1.11	2 (4%)
57	EHZ	T	101	20	29,36,37	1.72	5 (17%)	35,44,47	1.54	5 (14%)
45	3PE	m	202	-	39,39,50	0.97	4 (10%)	42,44,55	1.09	2 (4%)
45	3PE	M	602	-	50,50,50	0.87	4 (8%)	53,55,55	1.09	2 (3%)
52	CDL	X	201	-	85,85,99	0.97	7 (8%)	91,97,111	1.14	4 (4%)
52	CDL	h	202	-	67,67,99	1.09	7 (10%)	73,79,111	1.15	4 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
45	3PE	M	601	-	42,42,50	0.93	4 (9%)	45,47,55	1.12	2 (4%)
54	DGT	O	404	53	29,33,33	3.20	14 (48%)	44,52,52	2.14	12 (27%)
52	CDL	q	201	-	63,63,99	1.11	7 (11%)	69,75,111	1.14	4 (5%)
45	3PE	A	202	-	36,36,50	1.00	4 (11%)	39,41,55	1.15	2 (5%)
47	PC1	d	202	-	39,39,53	1.46	6 (15%)	45,47,61	1.08	2 (4%)
48	LMT	M	606	-	36,36,36	1.19	3 (8%)	47,47,47	1.23	5 (10%)
50	FMN	F	501	-	33,33,33	2.78	10 (30%)	48,50,50	1.85	16 (33%)
48	LMT	H	602	-	36,36,36	1.16	2 (5%)	47,47,47	0.95	2 (4%)
55	NDP	P	501	-	49,52,52	3.99	25 (51%)	66,80,80	2.03	14 (21%)
52	CDL	N	401	-	84,84,99	0.97	7 (8%)	90,96,111	1.10	4 (4%)
45	3PE	Z	202	-	42,42,50	0.94	4 (9%)	45,47,55	1.07	2 (4%)
46	SF4	B	201	2	0,12,12	-	-	-		
47	PC1	M	603	-	45,45,53	1.37	6 (13%)	51,53,61	1.05	2 (3%)
45	3PE	Y	201	-	38,38,50	0.98	4 (10%)	41,43,55	1.13	2 (4%)
45	3PE	A	203	-	50,50,50	0.86	4 (8%)	53,55,55	1.07	2 (3%)
45	3PE	H	601	-	35,35,50	1.01	4 (11%)	38,40,55	1.18	2 (5%)
45	3PE	f	101	-	30,30,50	1.10	4 (13%)	33,35,55	1.17	2 (6%)
46	SF4	G	802	7	0,12,12	-	-	-		
52	CDL	L	702	-	78,78,99	1.01	7 (8%)	84,90,111	1.10	4 (4%)
58	MYR	o	201	40	14,14,15	0.44	0	13,13,15	0.97	0
45	3PE	K	101	-	42,42,50	0.93	4 (9%)	45,47,55	3.96	4 (8%)
46	SF4	I	202	9	0,12,12	-	-	-		
45	3PE	O	405	-	40,40,50	0.96	4 (10%)	43,45,55	1.12	2 (4%)
49	FES	G	803	7	0,4,4	-	-	-		
48	LMT	Y	204	-	36,36,36	1.19	2 (5%)	47,47,47	1.04	2 (4%)
46	SF4	F	502	6	0,12,12	-	-	-		
45	3PE	O	403	-	35,35,50	1.02	4 (11%)	38,40,55	1.10	2 (5%)
45	3PE	j	101	-	38,38,50	0.98	4 (10%)	41,43,55	1.12	2 (4%)
45	3PE	Z	201	-	50,50,50	0.86	4 (8%)	53,55,55	1.10	3 (5%)
48	LMT	B	203	-	36,36,36	1.15	2 (5%)	47,47,47	0.89	0
45	3PE	h	201	-	35,35,50	1.02	4 (11%)	38,40,55	1.09	2 (5%)
46	SF4	G	801	7	0,12,12	-	-	-		
47	PC1	H	603	-	45,45,53	1.38	6 (13%)	51,53,61	1.07	2 (3%)
49	FES	E	301	5	0,4,4	-	-	-		
45	3PE	L	701	-	50,50,50	0.85	4 (8%)	53,55,55	1.12	2 (3%)
47	PC1	M	604	-	48,48,53	1.36	6 (12%)	54,56,61	1.06	2 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
45	3PE	I	201	-	50,50,50	0.87	4 (8%)	53,55,55	1.09	2 (3%)
45	3PE	Y	203	-	31,31,50	1.08	4 (12%)	34,36,55	1.12	2 (5%)
45	3PE	L	703	-	42,42,50	0.93	4 (9%)	45,47,55	1.11	2 (4%)
45	3PE	h	203	-	38,38,50	0.98	4 (10%)	41,43,55	1.11	2 (4%)

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
52	CDL	d	203	-	-	39/75/75/110	-
45	3PE	A	201	-	-	21/50/50/54	-
47	PC1	B	202	-	-	20/54/54/57	-
48	LMT	M	605	-	-	13/21/61/61	0/2/2/2
45	3PE	d	201	-	-	20/52/52/54	-
47	PC1	O	401	-	-	13/32/32/57	-
48	LMT	L	704	-	-	7/21/61/61	0/2/2/2
46	SF4	I	203	9	-	-	0/6/5/5
57	EHZ	U	101	20	-	8/42/44/45	-
45	3PE	L	706	-	-	20/48/48/54	-
48	LMT	m	201	-	-	10/21/61/61	0/2/2/2
45	3PE	L	705	-	-	21/54/54/54	-
45	3PE	Y	202	-	-	25/47/47/54	-
57	EHZ	T	101	20	-	12/42/44/45	-
45	3PE	m	202	-	-	21/43/43/54	-
45	3PE	M	602	-	-	21/54/54/54	-
52	CDL	X	201	-	-	42/96/96/110	-
52	CDL	h	202	-	-	40/78/78/110	-
45	3PE	M	601	-	-	17/46/46/54	-
54	DGT	O	404	53	-	8/22/34/34	0/3/3/3
52	CDL	q	201	-	-	28/74/74/110	-
45	3PE	A	202	-	-	23/40/40/54	-
47	PC1	d	202	-	-	19/43/43/57	-
48	LMT	M	606	-	-	9/21/61/61	0/2/2/2
50	FMN	F	501	-	-	6/18/18/18	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
48	LMT	H	602	-	-	12/21/61/61	0/2/2/2
55	NDP	P	501	-	-	9/34/77/77	0/5/5/5
52	CDL	N	401	-	-	44/95/95/110	-
45	3PE	Z	202	-	-	25/46/46/54	-
47	PC1	M	603	-	-	20/49/49/57	-
46	SF4	B	201	2	-	-	0/6/5/5
45	3PE	Y	201	-	-	15/42/42/54	-
45	3PE	A	203	-	-	23/54/54/54	-
45	3PE	H	601	-	-	17/39/39/54	-
45	3PE	f	101	-	-	21/34/34/54	-
52	CDL	L	702	-	-	46/89/89/110	-
58	MYR	o	201	40	-	4/11/12/13	-
46	SF4	G	802	7	-	-	0/6/5/5
45	3PE	K	101	-	-	23/46/46/54	-
46	SF4	I	202	9	-	-	0/6/5/5
45	3PE	O	405	-	-	16/44/44/54	-
49	FES	G	803	7	-	-	0/1/1/1
48	LMT	Y	204	-	-	16/21/61/61	0/2/2/2
46	SF4	F	502	6	-	-	0/6/5/5
45	3PE	O	403	-	-	17/39/39/54	-
45	3PE	j	101	-	-	19/42/42/54	-
45	3PE	Z	201	-	-	29/54/54/54	-
48	LMT	B	203	-	-	10/21/61/61	0/2/2/2
45	3PE	h	201	-	-	16/39/39/54	-
46	SF4	G	801	7	-	-	0/6/5/5
47	PC1	H	603	-	-	21/49/49/57	-
49	FES	E	301	5	-	-	0/1/1/1
45	3PE	L	701	-	-	16/54/54/54	-
47	PC1	M	604	-	-	20/52/52/57	-
45	3PE	I	201	-	-	23/54/54/54	-
45	3PE	Y	203	-	-	17/35/35/54	-
45	3PE	L	703	-	-	20/46/46/54	-
45	3PE	h	203	-	-	11/42/42/54	-

All (252) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
55	P	501	NDP	C6N-C5N	12.10	1.54	1.33
55	P	501	NDP	C2B-C1B	-8.69	1.30	1.53
55	P	501	NDP	O4B-C1B	8.55	1.62	1.42
55	P	501	NDP	C7N-N7N	8.32	1.55	1.33
55	P	501	NDP	O4D-C1D	8.20	1.61	1.42
54	O	404	DGT	C2'-C3'	-7.60	1.32	1.52
50	F	501	FMN	C4A-N5	7.32	1.45	1.30
55	P	501	NDP	C2D-C1D	-7.26	1.30	1.53
50	F	501	FMN	C10-N1	6.68	1.46	1.33
54	O	404	DGT	C4-N3	6.47	1.49	1.34
55	P	501	NDP	O4D-C4D	-6.37	1.30	1.45
57	U	101	EHZ	C15-N2	5.61	1.45	1.33
54	O	404	DGT	C2-N3	5.59	1.46	1.33
57	T	101	EHZ	C15-N2	5.56	1.45	1.33
55	P	501	NDP	C6A-N6A	5.54	1.48	1.34
55	P	501	NDP	P2B-O2B	5.45	1.69	1.59
57	T	101	EHZ	C12-N1	5.39	1.45	1.33
54	O	404	DGT	O4'-C4'	5.38	1.57	1.45
57	U	101	EHZ	C12-N1	5.36	1.45	1.33
50	F	501	FMN	C5A-N5	5.24	1.49	1.39
54	O	404	DGT	O4'-C1'	-5.21	1.30	1.42
55	P	501	NDP	O4B-C4B	-5.06	1.33	1.45
50	F	501	FMN	C2-N1	4.83	1.48	1.36
54	O	404	DGT	C2-N2	4.79	1.45	1.34
55	P	501	NDP	C2N-C3N	4.78	1.48	1.34
50	F	501	FMN	C9A-N10	4.62	1.49	1.41
50	F	501	FMN	C2-N3	4.27	1.49	1.39
55	P	501	NDP	O7N-C7N	-4.00	1.15	1.24
55	P	501	NDP	O2D-C2D	3.98	1.52	1.43
55	P	501	NDP	C5A-C4A	-3.96	1.31	1.39
54	O	404	DGT	C2'-C1'	3.89	1.63	1.52
47	d	202	PC1	O31-C31	3.82	1.44	1.33
50	F	501	FMN	C10-N10	3.82	1.45	1.37
47	M	604	PC1	O31-C31	3.82	1.44	1.33
50	F	501	FMN	C4-N3	3.80	1.45	1.38
54	O	404	DGT	C5'-C4'	-3.80	1.39	1.51
47	B	202	PC1	O31-C31	3.79	1.44	1.33
47	H	603	PC1	O31-C31	3.77	1.44	1.33
47	M	603	PC1	O31-C31	3.72	1.44	1.33
48	M	606	LMT	O5'-C1'	3.70	1.51	1.41
48	Y	204	LMT	O5'-C1'	3.61	1.51	1.41
47	d	202	PC1	O21-C21	3.61	1.44	1.34
47	M	604	PC1	O21-C21	3.61	1.44	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
47	B	202	PC1	O21-C21	3.57	1.44	1.34
47	H	603	PC1	O21-C21	3.53	1.44	1.34
48	Y	204	LMT	O5B-C1B	3.52	1.50	1.41
47	M	603	PC1	O21-C21	3.50	1.44	1.34
47	O	401	PC1	O21-C21	3.46	1.44	1.34
55	P	501	NDP	C8A-N9A	-3.43	1.31	1.37
48	m	201	LMT	O5'-C1'	3.42	1.50	1.41
48	m	201	LMT	O5B-C1B	3.41	1.50	1.41
48	B	203	LMT	O5'-C1'	3.41	1.50	1.41
48	M	605	LMT	O5B-C1B	3.41	1.50	1.41
48	M	605	LMT	O5'-C1'	3.41	1.50	1.41
48	H	602	LMT	O5'-C1'	3.40	1.50	1.41
48	B	203	LMT	O5B-C1B	3.36	1.50	1.41
55	P	501	NDP	C4N-C3N	3.34	1.56	1.49
48	L	704	LMT	O5B-C1B	3.30	1.50	1.41
48	H	602	LMT	O5B-C1B	3.25	1.50	1.41
48	L	704	LMT	O5'-C1'	3.15	1.49	1.41
48	M	606	LMT	O5B-C1B	3.12	1.49	1.41
50	F	501	FMN	O2-C2	-3.06	1.18	1.24
54	O	404	DGT	C5-N7	-2.98	1.33	1.39
55	P	501	NDP	C4N-C5N	2.78	1.56	1.48
54	O	404	DGT	C2-N1	2.78	1.44	1.37
52	L	702	CDL	OB8-CB7	2.69	1.41	1.33
54	O	404	DGT	O3'-C3'	2.68	1.49	1.43
52	X	201	CDL	OB8-CB7	2.68	1.41	1.33
52	h	202	CDL	OB8-CB7	2.66	1.41	1.33
52	q	201	CDL	OB8-CB7	2.66	1.41	1.33
50	F	501	FMN	O4-C4	-2.65	1.18	1.23
52	d	203	CDL	OB8-CB7	2.65	1.41	1.33
52	N	401	CDL	OB8-CB7	2.64	1.41	1.33
52	X	201	CDL	OA6-CA4	-2.62	1.40	1.46
52	h	202	CDL	OA6-CA4	-2.61	1.40	1.46
52	q	201	CDL	OA6-CA4	-2.61	1.40	1.46
47	M	603	PC1	O21-C2	-2.60	1.40	1.46
47	O	401	PC1	O21-C2	-2.59	1.40	1.46
52	L	702	CDL	OA6-CA4	-2.57	1.40	1.46
52	X	201	CDL	OB6-CB5	2.57	1.41	1.34
45	h	201	3PE	O21-C2	-2.56	1.40	1.46
55	P	501	NDP	O3B-C3B	-2.55	1.37	1.43
45	A	202	3PE	O21-C2	-2.55	1.40	1.46
45	M	602	3PE	O21-C2	-2.54	1.40	1.46
45	K	101	3PE	O21-C2	-2.54	1.40	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
45	M	601	3PE	O21-C2	-2.54	1.40	1.46
54	O	404	DGT	C5-C6	2.53	1.53	1.44
45	Y	202	3PE	O21-C2	-2.53	1.40	1.46
52	N	401	CDL	OA6-CA4	-2.53	1.40	1.46
45	m	202	3PE	O21-C2	-2.52	1.40	1.46
45	H	601	3PE	O21-C2	-2.52	1.40	1.46
45	A	203	3PE	O21-C2	-2.52	1.40	1.46
55	P	501	NDP	C5A-N7A	-2.51	1.34	1.39
47	B	202	PC1	O21-C2	-2.51	1.40	1.46
54	O	404	DGT	C6-N1	2.51	1.43	1.38
52	d	203	CDL	OA6-CA4	-2.50	1.40	1.46
47	M	604	PC1	O21-C2	-2.50	1.40	1.46
45	O	405	3PE	O21-C2	-2.50	1.40	1.46
45	L	703	3PE	O21-C2	-2.50	1.40	1.46
45	Y	203	3PE	O21-C2	-2.49	1.40	1.46
45	Z	201	3PE	O21-C2	-2.49	1.40	1.46
45	L	705	3PE	O21-C2	-2.49	1.40	1.46
45	d	201	3PE	O21-C2	-2.48	1.40	1.46
45	Y	201	3PE	O21-C2	-2.48	1.40	1.46
45	O	403	3PE	O21-C2	-2.48	1.40	1.46
54	O	404	DGT	O6-C6	-2.48	1.18	1.23
45	Z	202	3PE	O21-C2	-2.47	1.40	1.46
52	d	203	CDL	OB6-CB5	2.47	1.41	1.34
52	L	702	CDL	OB6-CB5	2.47	1.41	1.34
45	j	101	3PE	O21-C2	-2.46	1.40	1.46
55	P	501	NDP	C6N-N1N	2.46	1.43	1.37
47	d	202	PC1	O21-C2	-2.46	1.40	1.46
52	N	401	CDL	OB6-CB5	2.46	1.41	1.34
57	T	101	EHZ	C9-S1	2.46	1.82	1.76
55	P	501	NDP	O3D-C3D	-2.46	1.37	1.43
47	H	603	PC1	O21-C2	-2.46	1.40	1.46
45	M	602	3PE	O31-C31	2.46	1.40	1.33
52	q	201	CDL	OB6-CB5	2.46	1.41	1.34
52	q	201	CDL	OB6-CB4	-2.46	1.40	1.46
45	A	201	3PE	O21-C2	-2.45	1.40	1.46
45	A	201	3PE	O31-C31	2.45	1.40	1.33
45	L	706	3PE	O31-C31	2.44	1.40	1.33
45	Y	202	3PE	O31-C31	2.43	1.40	1.33
52	h	202	CDL	OB6-CB5	2.43	1.41	1.34
52	h	202	CDL	OA8-CA7	2.43	1.40	1.33
52	q	201	CDL	OA8-CA7	2.43	1.40	1.33
45	L	706	3PE	O21-C2	-2.43	1.40	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
45	f	101	3PE	O21-C2	-2.43	1.40	1.46
45	h	201	3PE	O31-C31	2.43	1.40	1.33
52	d	203	CDL	OB6-CB4	-2.43	1.40	1.46
45	I	201	3PE	O31-C31	2.43	1.40	1.33
52	L	702	CDL	OB6-CB4	-2.43	1.40	1.46
52	X	201	CDL	OA8-CA7	2.43	1.40	1.33
52	N	401	CDL	OB6-CB4	-2.42	1.40	1.46
45	H	601	3PE	O31-C31	2.42	1.40	1.33
45	Y	201	3PE	O31-C31	2.42	1.40	1.33
45	O	405	3PE	O31-C31	2.42	1.40	1.33
45	h	203	3PE	O21-C2	-2.42	1.40	1.46
52	X	201	CDL	OB6-CB4	-2.42	1.40	1.46
45	d	201	3PE	O31-C31	2.42	1.40	1.33
45	M	601	3PE	O31-C31	2.41	1.40	1.33
45	h	203	3PE	O31-C31	2.41	1.40	1.33
45	A	202	3PE	O31-C31	2.41	1.40	1.33
45	I	201	3PE	O21-C2	-2.41	1.40	1.46
52	N	401	CDL	OA8-CA7	2.41	1.40	1.33
52	d	203	CDL	OA8-CA7	2.41	1.40	1.33
52	h	202	CDL	OB6-CB4	-2.41	1.40	1.46
45	K	101	3PE	O31-C31	2.40	1.40	1.33
45	Y	203	3PE	O31-C31	2.40	1.40	1.33
57	U	101	EHZ	C9-S1	2.40	1.81	1.76
45	j	101	3PE	O31-C31	2.40	1.40	1.33
45	O	403	3PE	O31-C31	2.40	1.40	1.33
45	m	202	3PE	O31-C31	2.40	1.40	1.33
52	L	702	CDL	OA8-CA7	2.39	1.40	1.33
55	P	501	NDP	C7N-C3N	2.39	1.53	1.48
45	L	701	3PE	O31-C31	2.38	1.40	1.33
45	A	203	3PE	O31-C31	2.37	1.40	1.33
45	Z	201	3PE	O31-C31	2.37	1.40	1.33
45	f	101	3PE	O31-C31	2.37	1.40	1.33
45	L	705	3PE	O31-C31	2.37	1.40	1.33
45	Z	202	3PE	O31-C31	2.36	1.40	1.33
45	L	703	3PE	O31-C31	2.35	1.40	1.33
47	H	603	PC1	C22-C21	2.34	1.57	1.50
47	M	604	PC1	P-O11	2.33	1.68	1.59
47	d	202	PC1	C22-C21	2.33	1.57	1.50
47	M	603	PC1	P-O11	2.33	1.68	1.59
45	L	701	3PE	O21-C21	2.32	1.40	1.34
47	d	202	PC1	P-O11	2.31	1.68	1.59
47	H	603	PC1	P-O11	2.31	1.68	1.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
47	B	202	PC1	P-O11	2.30	1.68	1.59
47	O	401	PC1	P-O11	2.27	1.68	1.59
47	M	604	PC1	C22-C21	2.27	1.57	1.50
55	P	501	NDP	PA-O5B	2.27	1.68	1.59
45	f	101	3PE	O21-C21	2.26	1.40	1.34
47	O	401	PC1	O31-C31	2.25	1.44	1.33
47	B	202	PC1	C22-C21	2.25	1.57	1.50
57	T	101	EHZ	O3-C12	-2.24	1.18	1.23
47	O	401	PC1	C22-C21	2.24	1.57	1.50
57	U	101	EHZ	O3-C12	-2.24	1.18	1.23
55	P	501	NDP	P2B-O1X	2.24	1.57	1.50
47	M	603	PC1	C22-C21	2.24	1.57	1.50
45	L	706	3PE	O21-C21	2.23	1.40	1.34
57	T	101	EHZ	O4-C15	-2.23	1.19	1.23
45	h	203	3PE	O21-C21	2.21	1.40	1.34
45	I	201	3PE	O21-C21	2.20	1.40	1.34
52	d	203	CDL	OA8-CA6	-2.19	1.40	1.45
45	O	403	3PE	O21-C21	2.17	1.40	1.34
45	O	405	3PE	O21-C21	2.17	1.40	1.34
45	Z	202	3PE	O21-C21	2.17	1.40	1.34
45	m	202	3PE	O21-C21	2.17	1.40	1.34
52	h	202	CDL	OA8-CA6	-2.17	1.40	1.45
45	d	201	3PE	O21-C21	2.16	1.40	1.34
45	Y	203	3PE	O21-C21	2.16	1.40	1.34
52	q	201	CDL	OA8-CA6	-2.16	1.40	1.45
52	d	203	CDL	OA6-CA5	2.16	1.40	1.34
45	O	405	3PE	O31-C3	-2.16	1.40	1.45
45	L	703	3PE	O31-C3	-2.16	1.40	1.45
45	d	201	3PE	O31-C3	-2.16	1.40	1.45
45	Y	201	3PE	O21-C21	2.15	1.40	1.34
45	j	101	3PE	O21-C21	2.15	1.40	1.34
45	Z	201	3PE	O21-C21	2.15	1.40	1.34
57	U	101	EHZ	O4-C15	-2.15	1.19	1.23
45	L	703	3PE	O21-C21	2.15	1.40	1.34
52	X	201	CDL	OA8-CA6	-2.15	1.40	1.45
45	K	101	3PE	O21-C21	2.15	1.40	1.34
45	L	701	3PE	O21-C2	-2.14	1.41	1.46
45	A	201	3PE	O21-C21	2.14	1.40	1.34
45	Y	202	3PE	O21-C21	2.14	1.40	1.34
45	A	203	3PE	O21-C21	2.14	1.40	1.34
45	L	705	3PE	O31-C3	-2.13	1.40	1.45
52	N	401	CDL	OA6-CA5	2.13	1.40	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
52	L	702	CDL	OA8-CA6	-2.13	1.40	1.45
45	M	602	3PE	O21-C21	2.12	1.40	1.34
45	L	705	3PE	O21-C21	2.12	1.40	1.34
45	L	701	3PE	O31-C3	-2.12	1.40	1.45
47	M	603	PC1	P-O13	2.12	1.67	1.59
45	M	602	3PE	O31-C3	-2.12	1.40	1.45
45	m	202	3PE	O31-C3	-2.12	1.40	1.45
47	O	401	PC1	P-O13	2.11	1.67	1.59
45	h	201	3PE	O31-C3	-2.11	1.40	1.45
45	f	101	3PE	O31-C3	-2.11	1.40	1.45
45	K	101	3PE	O31-C3	-2.11	1.40	1.45
52	q	201	CDL	OA6-CA5	2.11	1.40	1.34
45	A	202	3PE	O31-C3	-2.11	1.40	1.45
45	Y	202	3PE	O31-C3	-2.11	1.40	1.45
45	I	201	3PE	O31-C3	-2.11	1.40	1.45
52	N	401	CDL	OA8-CA6	-2.10	1.40	1.45
45	A	201	3PE	O31-C3	-2.10	1.40	1.45
45	H	601	3PE	O31-C3	-2.10	1.40	1.45
45	A	203	3PE	O31-C3	-2.10	1.40	1.45
45	h	201	3PE	O21-C21	2.10	1.40	1.34
47	M	604	PC1	P-O13	2.09	1.67	1.59
45	H	601	3PE	O21-C21	2.09	1.40	1.34
52	h	202	CDL	OA6-CA5	2.09	1.40	1.34
45	A	202	3PE	O21-C21	2.08	1.40	1.34
45	Z	202	3PE	O31-C3	-2.08	1.40	1.45
52	L	702	CDL	OA6-CA5	2.08	1.40	1.34
45	Z	201	3PE	O31-C3	-2.08	1.40	1.45
45	Y	201	3PE	O31-C3	-2.08	1.40	1.45
45	M	601	3PE	O21-C21	2.07	1.40	1.34
45	Y	203	3PE	O31-C3	-2.07	1.40	1.45
45	M	601	3PE	O31-C3	-2.06	1.40	1.45
45	O	403	3PE	O31-C3	-2.05	1.40	1.45
45	L	706	3PE	O31-C3	-2.05	1.40	1.45
52	X	201	CDL	OA6-CA5	2.05	1.40	1.34
48	M	606	LMT	O5'-C5'	2.05	1.49	1.44
47	H	603	PC1	P-O13	2.04	1.67	1.59
47	B	202	PC1	P-O13	2.04	1.67	1.59
45	h	203	3PE	O31-C3	-2.04	1.40	1.45
47	d	202	PC1	P-O13	2.04	1.67	1.59
45	j	101	3PE	O31-C3	-2.03	1.40	1.45
55	P	501	NDP	C5B-C4B	2.02	1.57	1.51

All (161) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
45	K	101	3PE	O31-C31-O32	-17.29	79.96	123.59
45	K	101	3PE	O31-C31-C32	15.27	159.83	111.91
45	K	101	3PE	O32-C31-C32	-11.23	79.92	123.73
54	O	404	DGT	C1'-N9-C8	5.94	141.15	127.85
55	P	501	NDP	N6A-C6A-N1A	-5.67	105.93	118.35
55	P	501	NDP	C4A-N9A-C1B	-5.53	113.43	126.59
54	O	404	DGT	C1'-N9-C4	-5.50	110.23	125.48
55	P	501	NDP	C5A-C4A-N3A	-5.48	119.61	126.75
55	P	501	NDP	N3A-C2A-N1A	-5.37	120.21	128.60
50	F	501	FMN	C7M-C7-C6	5.09	128.91	119.49
55	P	501	NDP	C1B-N9A-C8A	5.06	138.57	127.14
57	U	101	EHZ	C8-C9-S1	5.03	119.85	113.63
50	F	501	FMN	C9-C8-C7	5.02	126.86	119.67
54	O	404	DGT	C5-C4-N3	-5.01	120.33	128.46
57	T	101	EHZ	C8-C9-S1	4.98	119.79	113.63
55	P	501	NDP	C5A-C6A-N6A	4.55	133.33	123.43
45	L	701	3PE	O21-C21-C22	4.36	120.89	111.50
54	O	404	DGT	C2-N3-C4	4.28	119.93	112.30
52	X	201	CDL	OB6-CB5-C51	4.28	120.72	111.50
45	I	201	3PE	O21-C21-C22	4.27	120.69	111.50
45	L	706	3PE	O21-C21-C22	4.24	120.64	111.50
50	F	501	FMN	C8M-C8-C7	-4.24	112.05	120.74
55	P	501	NDP	N9A-C8A-N7A	-4.23	108.13	113.91
52	d	203	CDL	OA6-CA5-C11	4.16	120.47	111.50
47	H	603	PC1	O21-C21-C22	4.15	120.45	111.50
45	A	202	3PE	O21-C21-C22	4.12	120.38	111.50
47	M	604	PC1	O21-C21-C22	4.11	120.35	111.50
45	Z	201	3PE	O21-C21-C22	4.10	120.35	111.50
45	Y	201	3PE	O21-C21-C22	4.05	120.22	111.50
52	h	202	CDL	OB6-CB5-C51	4.03	120.18	111.50
45	f	101	3PE	O21-C21-C22	4.02	120.17	111.50
45	L	703	3PE	O21-C21-C22	4.02	120.16	111.50
52	X	201	CDL	OA6-CA5-C11	4.01	120.15	111.50
45	h	203	3PE	O21-C21-C22	4.01	120.13	111.50
45	L	705	3PE	O21-C21-C22	3.99	120.09	111.50
45	j	101	3PE	O21-C21-C22	3.98	120.09	111.50
52	q	201	CDL	OB6-CB5-C51	3.98	120.08	111.50
47	B	202	PC1	O21-C21-C22	3.98	120.08	111.50
47	d	202	PC1	O21-C21-C22	3.97	120.06	111.50
52	h	202	CDL	OA6-CA5-C11	3.96	120.04	111.50
52	L	702	CDL	OB6-CB5-C51	3.96	120.03	111.50
45	K	101	3PE	O21-C21-C22	3.93	119.98	111.50
45	d	201	3PE	O21-C21-C22	3.93	119.96	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
45	A	201	3PE	O21-C21-C22	3.92	119.95	111.50
45	M	602	3PE	O21-C21-C22	3.92	119.94	111.50
45	Y	202	3PE	O21-C21-C22	3.90	119.91	111.50
45	A	203	3PE	O21-C21-C22	3.88	119.86	111.50
45	O	403	3PE	O21-C21-C22	3.85	119.80	111.50
45	m	202	3PE	O21-C21-C22	3.85	119.79	111.50
52	q	201	CDL	OA6-CA5-C11	3.84	119.78	111.50
45	Y	203	3PE	O21-C21-C22	3.82	119.74	111.50
52	N	401	CDL	OA6-CA5-C11	3.81	119.71	111.50
47	O	401	PC1	O21-C21-C22	3.81	119.70	111.50
45	M	601	3PE	O21-C21-C22	3.80	119.70	111.50
45	Z	202	3PE	O21-C21-C22	3.80	119.70	111.50
45	H	601	3PE	O21-C21-C22	3.80	119.69	111.50
52	L	702	CDL	OA6-CA5-C11	3.79	119.68	111.50
52	N	401	CDL	OB6-CB5-C51	3.78	119.64	111.50
45	O	405	3PE	O21-C21-C22	3.77	119.63	111.50
45	h	201	3PE	O21-C21-C22	3.76	119.59	111.50
55	P	501	NDP	C2A-N3A-C4A	3.71	120.51	111.75
47	M	603	PC1	O21-C21-C22	3.68	119.44	111.50
45	H	601	3PE	O31-C31-C32	3.41	120.31	111.38
52	d	203	CDL	OB6-CB5-C51	3.29	119.99	110.80
48	M	605	LMT	C1B-O1B-C4'	-3.27	109.87	117.96
55	P	501	NDP	N3A-C4A-N9A	3.25	132.43	127.08
50	F	501	FMN	C4-N3-C2	-3.21	119.71	125.64
48	M	606	LMT	C1B-O1B-C4'	-3.13	110.22	117.96
54	O	404	DGT	N9-C8-N7	-3.10	107.55	113.39
50	F	501	FMN	C7M-C7-C8	-3.06	114.47	120.74
54	O	404	DGT	N9-C4-N3	3.06	132.07	125.94
55	P	501	NDP	C5A-N7A-C8A	3.03	107.81	103.51
48	M	606	LMT	O5'-C5'-C4'	2.96	115.99	109.75
48	M	606	LMT	C3B-C4B-C5B	2.96	115.52	110.24
48	M	605	LMT	C1'-O5'-C5'	-2.94	107.91	113.69
54	O	404	DGT	PA-O3A-PB	-2.92	122.82	132.83
54	O	404	DGT	C2-N1-C6	-2.91	119.79	125.10
45	L	706	3PE	O31-C31-C32	2.90	121.02	111.91
48	M	605	LMT	C1'-C2'-C3'	2.83	115.89	110.00
48	m	201	LMT	C1B-O1B-C4'	-2.83	110.97	117.96
57	U	101	EHZ	C10-S1-C9	2.80	110.59	101.87
48	Y	204	LMT	C1B-O1B-C4'	-2.79	111.05	117.96
47	d	202	PC1	O31-C31-C32	2.78	120.63	111.91
45	f	101	3PE	O31-C31-C32	2.77	120.61	111.91
45	O	405	3PE	O31-C31-C32	2.76	120.57	111.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
45	M	601	3PE	O31-C31-C32	2.75	120.54	111.91
45	M	602	3PE	O31-C31-C32	2.71	120.42	111.91
52	q	201	CDL	OB8-CB7-C71	2.70	120.37	111.91
45	Z	202	3PE	O31-C31-C32	2.69	120.35	111.91
48	L	704	LMT	O5B-C5B-C4B	2.67	114.55	109.69
45	O	403	3PE	O31-C31-C32	2.67	120.28	111.91
45	Y	202	3PE	O31-C31-C32	2.67	120.28	111.91
45	j	101	3PE	O31-C31-C32	2.66	120.27	111.91
45	A	201	3PE	O31-C31-C32	2.65	120.23	111.91
45	d	201	3PE	O31-C31-C32	2.65	120.23	111.91
52	N	401	CDL	OB8-CB7-C71	2.64	120.18	111.91
57	U	101	EHZ	C18-C17-C20	2.63	112.53	108.23
45	L	701	3PE	O31-C31-C32	2.62	120.14	111.91
52	h	202	CDL	OA8-CA7-C31	2.62	120.14	111.91
54	O	404	DGT	C5-C6-N1	2.62	119.85	113.19
45	Y	203	3PE	O31-C31-C32	2.61	120.11	111.91
47	M	603	PC1	O31-C31-C32	2.61	120.11	111.91
52	q	201	CDL	OA8-CA7-C31	2.61	120.10	111.91
45	I	201	3PE	O31-C31-C32	2.59	120.05	111.91
45	Y	201	3PE	O31-C31-C32	2.59	120.04	111.91
45	Z	201	3PE	O31-C31-C32	2.59	120.04	111.91
52	X	201	CDL	OA8-CA7-C31	2.59	120.04	111.91
55	P	501	NDP	PN-O3-PA	-2.59	123.94	132.83
45	A	202	3PE	O31-C31-C32	2.59	120.03	111.91
52	N	401	CDL	OA8-CA7-C31	2.59	120.02	111.91
45	h	203	3PE	O31-C31-C32	2.58	120.02	111.91
47	B	202	PC1	O31-C31-C32	2.57	119.99	111.91
52	d	203	CDL	OA8-CA7-C31	2.57	119.98	111.91
45	h	201	3PE	O31-C31-C32	2.57	119.98	111.91
47	M	604	PC1	O31-C31-C32	2.57	119.97	111.91
52	h	202	CDL	OB8-CB7-C71	2.57	119.96	111.91
52	d	203	CDL	OB8-CB7-C71	2.55	119.91	111.91
45	A	203	3PE	O31-C31-C32	2.55	119.90	111.91
47	H	603	PC1	O31-C31-C32	2.54	119.87	111.91
45	m	202	3PE	O31-C31-C32	2.53	119.84	111.91
50	F	501	FMN	C4A-C4-N3	2.52	119.58	113.19
45	L	703	3PE	O31-C31-C32	2.51	119.78	111.91
57	T	101	EHZ	C10-S1-C9	2.51	109.68	101.87
57	U	101	EHZ	C13-C12-N1	2.51	120.64	116.42
45	L	705	3PE	O31-C31-C32	2.48	119.68	111.91
54	O	404	DGT	O6-C6-C5	-2.47	120.04	126.60
52	X	201	CDL	OB8-CB7-C71	2.47	119.66	111.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	T	101	EHZ	C13-C12-N1	2.47	120.58	116.42
50	F	501	FMN	C4A-C10-N10	2.43	120.03	116.48
48	L	704	LMT	C3B-C4B-C5B	2.41	114.54	110.24
52	L	702	CDL	OB8-CB7-C71	2.38	119.38	111.91
52	L	702	CDL	OA8-CA7-C31	2.36	119.32	111.91
50	F	501	FMN	O4-C4-C4A	-2.35	120.37	126.60
48	L	704	LMT	C2'-C3'-C4'	2.27	114.87	109.68
55	P	501	NDP	C2B-C1B-N9A	-2.27	109.71	113.53
54	O	404	DGT	C8-N7-C5	2.27	108.34	104.24
50	F	501	FMN	C9A-C5A-N5	-2.25	119.99	122.43
50	F	501	FMN	C10-C4A-N5	-2.22	120.15	124.86
57	T	101	EHZ	C16-C15-N2	2.20	120.96	116.58
57	T	101	EHZ	O2-C9-S1	-2.20	119.76	122.61
48	L	704	LMT	O5'-C5'-C4'	2.20	114.39	109.75
48	M	606	LMT	C1'-O5'-C5'	2.20	118.00	113.69
48	M	606	LMT	O5B-C5B-C4B	2.18	113.64	109.69
48	H	602	LMT	O5B-C5B-C4B	2.14	113.57	109.69
50	F	501	FMN	C6-C7-C8	-2.12	116.62	119.67
50	F	501	FMN	C4-C4A-C10	2.11	120.34	116.79
48	L	704	LMT	C1B-O1B-C4'	-2.10	112.77	117.96
55	P	501	NDP	C4A-N9A-C8A	2.10	108.00	105.73
57	U	101	EHZ	O2-C9-S1	-2.10	119.89	122.61
48	M	605	LMT	O5'-C1'-C2'	2.09	114.76	110.35
55	P	501	NDP	C4A-C5A-N7A	-2.07	108.10	110.62
50	F	501	FMN	C6-C5A-C9A	2.07	121.86	118.94
57	U	101	EHZ	C14-C13-C12	-2.06	108.92	112.36
50	F	501	FMN	C4A-C10-N1	-2.06	119.96	124.73
54	O	404	DGT	C2'-C1'-N9	-2.05	109.04	113.77
45	Z	201	3PE	C2-O21-C21	-2.04	112.78	117.79
50	F	501	FMN	C9A-C9-C8	-2.04	115.21	119.30
57	U	101	EHZ	O3-C12-N1	-2.03	119.19	123.01
50	F	501	FMN	C5A-C9A-N10	2.02	120.05	117.95
48	Y	204	LMT	C6B-C5B-C4B	-2.02	108.27	113.00
48	H	602	LMT	C6B-C5B-C4B	-2.02	108.28	113.00

There are no chirality outliers.

All (973) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
45	A	201	3PE	C1-O11-P-O12
45	A	201	3PE	C1-O11-P-O14
45	A	202	3PE	C1-O11-P-O12

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Mol	Chain	Res	Type	Atoms
45	A	202	3PE	C1-O11-P-O13
45	A	202	3PE	C1-O11-P-O14
45	A	202	3PE	C11-O13-P-O14
45	A	202	3PE	O11-C1-C2-O21
45	A	202	3PE	C22-C21-O21-C2
45	A	203	3PE	C1-O11-P-O12
45	A	203	3PE	C1-O11-P-O13
45	A	203	3PE	C1-O11-P-O14
45	H	601	3PE	C1-O11-P-O12
45	H	601	3PE	C1-O11-P-O14
45	H	601	3PE	O13-C11-C12-N
45	H	601	3PE	O32-C31-O31-C3
45	H	601	3PE	C32-C31-O31-C3
45	I	201	3PE	C1-O11-P-O12
45	I	201	3PE	C1-O11-P-O13
45	I	201	3PE	C1-O11-P-O14
45	K	101	3PE	C1-O11-P-O14
45	K	101	3PE	O11-C1-C2-O21
45	K	101	3PE	O32-C31-O31-C3
45	L	701	3PE	O13-C11-C12-N
45	L	701	3PE	C22-C21-O21-C2
45	L	703	3PE	C1-O11-P-O12
45	L	703	3PE	C1-O11-P-O13
45	L	703	3PE	C1-O11-P-O14
45	L	703	3PE	O13-C11-C12-N
45	L	703	3PE	O22-C21-O21-C2
45	L	703	3PE	C22-C21-O21-C2
45	L	705	3PE	C1-O11-P-O12
45	L	705	3PE	C1-O11-P-O13
45	L	705	3PE	C1-O11-P-O14
45	L	705	3PE	O13-C11-C12-N
45	L	705	3PE	O22-C21-O21-C2
45	L	706	3PE	O22-C21-O21-C2
45	L	706	3PE	C22-C21-O21-C2
45	M	601	3PE	C1-O11-P-O12
45	M	601	3PE	C1-O11-P-O14
45	M	602	3PE	O13-C11-C12-N
45	M	602	3PE	O11-C1-C2-O21
45	M	602	3PE	C22-C21-O21-C2
45	O	403	3PE	C1-O11-P-O12
45	O	403	3PE	C1-O11-P-O13
45	O	403	3PE	C1-O11-P-O14

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Mol	Chain	Res	Type	Atoms
45	O	403	3PE	O22-C21-O21-C2
45	O	403	3PE	C22-C21-O21-C2
45	O	405	3PE	C1-O11-P-O14
45	O	405	3PE	O22-C21-O21-C2
45	O	405	3PE	C22-C21-O21-C2
45	Y	201	3PE	C1-O11-P-O12
45	Y	201	3PE	C1-O11-P-O13
45	Y	201	3PE	C1-O11-P-O14
45	Y	201	3PE	O22-C21-O21-C2
45	Y	202	3PE	C1-O11-P-O12
45	Y	202	3PE	C1-O11-P-O14
45	Y	202	3PE	C11-O13-P-O11
45	Y	202	3PE	C11-O13-P-O12
45	Y	202	3PE	C11-O13-P-O14
45	Y	203	3PE	C1-O11-P-O12
45	Y	203	3PE	C1-O11-P-O14
45	Y	203	3PE	C11-O13-P-O14
45	Y	203	3PE	O13-C11-C12-N
45	Y	203	3PE	O21-C2-C3-O31
45	Z	201	3PE	C1-O11-P-O12
45	Z	201	3PE	C1-O11-P-O14
45	Z	201	3PE	O13-C11-C12-N
45	Z	202	3PE	C1-O11-P-O12
45	Z	202	3PE	C1-O11-P-O14
45	Z	202	3PE	O13-C11-C12-N
45	Z	202	3PE	O21-C2-C3-O31
45	d	201	3PE	C1-O11-P-O12
45	d	201	3PE	C1-O11-P-O14
45	d	201	3PE	O13-C11-C12-N
45	h	201	3PE	C1-O11-P-O12
45	h	201	3PE	C1-O11-P-O13
45	h	201	3PE	C1-O11-P-O14
45	h	203	3PE	C2-C1-O11-P
45	j	101	3PE	C1-O11-P-O12
45	j	101	3PE	C1-O11-P-O14
45	m	202	3PE	C1-O11-P-O12
45	m	202	3PE	C1-O11-P-O13
45	m	202	3PE	C1-O11-P-O14
45	m	202	3PE	C11-O13-P-O11
45	m	202	3PE	C11-O13-P-O14
45	m	202	3PE	C22-C21-O21-C2
47	B	202	PC1	C22-C21-O21-C2

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Mol	Chain	Res	Type	Atoms
47	H	603	PC1	C1-O11-P-O13
47	M	603	PC1	C11-O13-P-O12
47	M	603	PC1	C11-O13-P-O14
47	M	603	PC1	C11-O13-P-O11
47	M	604	PC1	C11-O13-P-O14
47	M	604	PC1	C11-O13-P-O11
47	M	604	PC1	O22-C21-O21-C2
47	M	604	PC1	O32-C31-O31-C3
47	M	604	PC1	C32-C31-O31-C3
47	O	401	PC1	C11-O13-P-O12
47	O	401	PC1	C11-O13-P-O14
47	O	401	PC1	O22-C21-O21-C2
47	d	202	PC1	C11-O13-P-O12
47	d	202	PC1	C1-O11-P-O12
47	d	202	PC1	C1-O11-P-O14
47	d	202	PC1	C1-O11-P-O13
47	d	202	PC1	O13-C11-C12-N
48	B	203	LMT	C2'-C1'-O1'-C1
48	H	602	LMT	C2-C1-O1'-C1'
48	M	605	LMT	C2-C1-O1'-C1'
48	M	606	LMT	C2'-C1'-O1'-C1
48	M	606	LMT	O5'-C1'-O1'-C1
50	F	501	FMN	C1'-C2'-C3'-C4'
52	L	702	CDL	CA2-C1-CB2-OB2
52	L	702	CDL	CA2-OA2-PA1-OA3
52	L	702	CDL	CA2-OA2-PA1-OA4
52	L	702	CDL	CA2-OA2-PA1-OA5
52	L	702	CDL	CB2-OB2-PB2-OB3
52	L	702	CDL	CB2-OB2-PB2-OB4
52	N	401	CDL	CA2-OA2-PA1-OA3
52	N	401	CDL	CA2-OA2-PA1-OA4
52	N	401	CDL	CA2-OA2-PA1-OA5
52	N	401	CDL	CB2-OB2-PB2-OB3
52	N	401	CDL	CB2-OB2-PB2-OB4
52	N	401	CDL	C51-CB5-OB6-CB4
52	X	201	CDL	CA2-OA2-PA1-OA3
52	X	201	CDL	CB2-OB2-PB2-OB3
52	X	201	CDL	CB2-OB2-PB2-OB4
52	X	201	CDL	CB2-OB2-PB2-OB5
52	X	201	CDL	OB7-CB5-OB6-CB4
52	X	201	CDL	C51-CB5-OB6-CB4
52	d	203	CDL	CA2-OA2-PA1-OA3

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Mol	Chain	Res	Type	Atoms
52	d	203	CDL	CA2-OA2-PA1-OA4
52	d	203	CDL	CA2-OA2-PA1-OA5
52	d	203	CDL	CA3-OA5-PA1-OA3
52	h	202	CDL	O1-C1-CB2-OB2
52	h	202	CDL	CA2-OA2-PA1-OA3
52	h	202	CDL	CA3-OA5-PA1-OA3
52	h	202	CDL	CB2-OB2-PB2-OB3
52	h	202	CDL	CB2-OB2-PB2-OB4
52	h	202	CDL	C51-CB5-OB6-CB4
52	q	201	CDL	CB2-OB2-PB2-OB4
54	O	404	DGT	PB-O3B-PG-O2G
54	O	404	DGT	C5'-O5'-PA-O1A
54	O	404	DGT	C5'-O5'-PA-O2A
55	P	501	NDP	C5B-O5B-PA-O1A
55	P	501	NDP	C5B-O5B-PA-O2A
55	P	501	NDP	C3B-C4B-C5B-O5B
57	T	101	EHZ	C6-C7-C8-C9
57	T	101	EHZ	C12-C13-C14-N2
57	T	101	EHZ	N2-C15-C16-O5
57	T	101	EHZ	C16-C17-C20-O6
57	U	101	EHZ	C6-C7-C8-C9
57	U	101	EHZ	C11-C10-S1-C9
57	U	101	EHZ	O2-C9-S1-C10
57	U	101	EHZ	C8-C9-S1-C10
45	O	405	3PE	O32-C31-O31-C3
45	h	201	3PE	O32-C31-O31-C3
45	j	101	3PE	O32-C31-O31-C3
52	X	201	CDL	OB9-CB7-OB8-CB6
45	M	602	3PE	C32-C31-O31-C3
45	O	405	3PE	C32-C31-O31-C3
45	j	101	3PE	C32-C31-O31-C3
52	X	201	CDL	C71-CB7-OB8-CB6
52	q	201	CDL	C31-CA7-OA8-CA6
45	A	201	3PE	O32-C31-O31-C3
45	A	202	3PE	O32-C31-O31-C3
45	M	602	3PE	O32-C31-O31-C3
45	O	403	3PE	O32-C31-O31-C3
45	Y	202	3PE	O32-C31-O31-C3
45	d	201	3PE	O32-C31-O31-C3
52	h	202	CDL	OA9-CA7-OA8-CA6
52	q	201	CDL	OA9-CA7-OA8-CA6
45	L	701	3PE	O22-C21-O21-C2

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Mol	Chain	Res	Type	Atoms
45	M	602	3PE	O22-C21-O21-C2
45	m	202	3PE	O22-C21-O21-C2
47	B	202	PC1	O22-C21-O21-C2
47	d	202	PC1	O22-C21-O21-C2
52	N	401	CDL	OB7-CB5-OB6-CB4
52	d	203	CDL	OB7-CB5-OB6-CB4
52	h	202	CDL	OB7-CB5-OB6-CB4
45	A	201	3PE	C32-C31-O31-C3
45	A	202	3PE	C32-C31-O31-C3
45	K	101	3PE	C32-C31-O31-C3
45	O	403	3PE	C32-C31-O31-C3
45	Y	202	3PE	C32-C31-O31-C3
45	d	201	3PE	C32-C31-O31-C3
45	h	201	3PE	C32-C31-O31-C3
52	d	203	CDL	C31-CA7-OA8-CA6
52	h	202	CDL	C31-CA7-OA8-CA6
45	L	705	3PE	C22-C21-O21-C2
45	Y	201	3PE	C22-C21-O21-C2
47	M	604	PC1	C22-C21-O21-C2
47	O	401	PC1	C22-C21-O21-C2
47	d	202	PC1	C22-C21-O21-C2
52	d	203	CDL	C51-CB5-OB6-CB4
47	d	202	PC1	O32-C31-O31-C3
45	Z	202	3PE	C32-C31-O31-C3
45	f	101	3PE	C32-C31-O31-C3
47	d	202	PC1	C32-C31-O31-C3
45	A	202	3PE	O22-C21-O21-C2
45	f	101	3PE	O32-C31-O31-C3
48	M	605	LMT	O5'-C5'-C6'-O6'
48	Y	204	LMT	O5B-C5B-C6B-O6B
52	L	702	CDL	O1-C1-CB2-OB2
52	N	401	CDL	O1-C1-CB2-OB2
52	d	203	CDL	O1-C1-CB2-OB2
45	Y	203	3PE	C32-C31-O31-C3
45	Z	202	3PE	O32-C31-O31-C3
52	d	203	CDL	OA9-CA7-OA8-CA6
48	M	606	LMT	O5B-C5B-C6B-O6B
48	H	602	LMT	C4B-C5B-C6B-O6B
48	H	602	LMT	O5B-C5B-C6B-O6B
47	O	401	PC1	O32-C31-O31-C3
48	L	704	LMT	C4B-C5B-C6B-O6B
55	P	501	NDP	O4B-C4B-C5B-O5B

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Mol	Chain	Res	Type	Atoms
48	B	203	LMT	O5'-C5'-C6'-O6'
48	m	201	LMT	O5B-C5B-C6B-O6B
48	Y	204	LMT	C4B-C5B-C6B-O6B
48	M	606	LMT	C4B-C5B-C6B-O6B
48	H	602	LMT	O5'-C5'-C6'-O6'
48	B	203	LMT	O5'-C1'-O1'-C1
48	M	605	LMT	C2-C3-C4-C5
52	N	401	CDL	C71-CB7-OB8-CB6
45	Y	203	3PE	O32-C31-O31-C3
52	d	203	CDL	CA2-C1-CB2-OB2
52	N	401	CDL	OB9-CB7-OB8-CB6
52	d	203	CDL	C71-CB7-OB8-CB6
47	O	401	PC1	C32-C31-O31-C3
48	H	602	LMT	O5B-C1B-O1B-C4'
45	I	201	3PE	C32-C33-C34-C35
48	H	602	LMT	C4'-C5'-C6'-O6'
48	Y	204	LMT	O5'-C5'-C6'-O6'
48	M	605	LMT	C4B-C5B-C6B-O6B
45	M	601	3PE	C22-C21-O21-C2
48	m	201	LMT	C4'-C5'-C6'-O6'
45	A	202	3PE	C21-C22-C23-C24
45	K	101	3PE	C31-C32-C33-C34
48	H	602	LMT	C2B-C1B-O1B-C4'
48	M	605	LMT	O5B-C5B-C6B-O6B
48	B	203	LMT	C4'-C5'-C6'-O6'
48	m	201	LMT	C4B-C5B-C6B-O6B
45	L	701	3PE	C31-C32-C33-C34
45	Y	202	3PE	C31-C32-C33-C34
52	N	401	CDL	CA7-C31-C32-C33
52	X	201	CDL	CA7-C31-C32-C33
52	d	203	CDL	CA5-C11-C12-C13
52	h	202	CDL	CB5-C51-C52-C53
48	Y	204	LMT	C4'-C5'-C6'-O6'
48	B	203	LMT	C3'-C4'-O1B-C1B
45	L	706	3PE	C21-C22-C23-C24
45	M	601	3PE	C21-C22-C23-C24
45	h	203	3PE	C31-C32-C33-C34
45	j	101	3PE	C31-C32-C33-C34
48	L	704	LMT	O5B-C5B-C6B-O6B
54	O	404	DGT	O4'-C4'-C5'-O5'
54	O	404	DGT	C3'-C4'-C5'-O5'
48	M	606	LMT	O5B-C1B-O1B-C4'

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Mol	Chain	Res	Type	Atoms
45	Z	201	3PE	C31-C32-C33-C34
52	d	203	CDL	OB9-CB7-OB8-CB6
48	M	605	LMT	O1'-C1-C2-C3
45	A	203	3PE	C31-C32-C33-C34
47	H	603	PC1	C21-C22-C23-C24
48	M	606	LMT	O1'-C1-C2-C3
48	M	605	LMT	C4'-C5'-C6'-O6'
45	A	201	3PE	C22-C21-O21-C2
45	A	201	3PE	C1-O11-P-O13
45	H	601	3PE	C1-O11-P-O13
45	K	101	3PE	C1-O11-P-O13
45	K	101	3PE	C11-O13-P-O11
45	L	706	3PE	C1-O11-P-O13
45	M	601	3PE	C1-O11-P-O13
45	Y	202	3PE	C1-O11-P-O13
45	Y	203	3PE	C1-O11-P-O13
45	Z	201	3PE	C1-O11-P-O13
45	Z	202	3PE	C1-O11-P-O13
45	d	201	3PE	C1-O11-P-O13
45	j	101	3PE	C1-O11-P-O13
47	M	604	PC1	C1-O11-P-O13
47	O	401	PC1	C11-O13-P-O11
47	d	202	PC1	C11-O13-P-O11
52	L	702	CDL	CB2-OB2-PB2-OB5
52	N	401	CDL	CA3-OA5-PA1-OA2
52	N	401	CDL	CB2-OB2-PB2-OB5
52	X	201	CDL	CA2-OA2-PA1-OA5
52	d	203	CDL	CB2-OB2-PB2-OB5
52	h	202	CDL	CB2-OB2-PB2-OB5
52	q	201	CDL	CB2-OB2-PB2-OB5
45	A	201	3PE	C21-C22-C23-C24
45	M	602	3PE	C21-C22-C23-C24
52	d	203	CDL	CB7-C71-C72-C73
52	h	202	CDL	CA2-C1-CB2-OB2
45	A	201	3PE	O22-C21-O21-C2
45	M	601	3PE	O22-C21-O21-C2
47	M	603	PC1	C32-C31-O31-C3
47	B	202	PC1	C3D-C3E-C3F-C3G
50	F	501	FMN	O2'-C2'-C3'-O3'
45	A	203	3PE	C32-C33-C34-C35
45	h	203	3PE	C28-C29-C2A-C2B
45	A	203	3PE	C26-C27-C28-C29

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Mol	Chain	Res	Type	Atoms
45	K	101	3PE	C33-C34-C35-C36
45	K	101	3PE	C39-C3A-C3B-C3C
45	L	703	3PE	C35-C36-C37-C38
45	L	703	3PE	C22-C23-C24-C25
45	Z	201	3PE	C37-C38-C39-C3A
47	H	603	PC1	C34-C35-C36-C37
52	X	201	CDL	C51-C52-C53-C54
52	d	203	CDL	C76-C77-C78-C79
52	h	202	CDL	C58-C59-C60-C61
45	A	202	3PE	C27-C28-C29-C2A
45	H	601	3PE	C22-C23-C24-C25
45	Z	201	3PE	C32-C33-C34-C35
47	M	603	PC1	C32-C33-C34-C35
47	d	202	PC1	C39-C3A-C3B-C3C
48	Y	204	LMT	C2-C3-C4-C5
48	Y	204	LMT	C7-C8-C9-C10
52	N	401	CDL	C76-C77-C78-C79
52	d	203	CDL	C33-C34-C35-C36
47	M	603	PC1	C2-C1-O11-P
45	H	601	3PE	C25-C26-C27-C28
45	M	601	3PE	C34-C35-C36-C37
45	Z	201	3PE	C22-C23-C24-C25
52	L	702	CDL	C36-C37-C38-C39
52	d	203	CDL	C39-C40-C41-C42
47	M	604	PC1	C39-C3A-C3B-C3C
48	L	704	LMT	C11-C10-C9-C8
52	X	201	CDL	C22-C23-C24-C25
45	O	405	3PE	C31-C32-C33-C34
52	X	201	CDL	CA5-C11-C12-C13
48	m	201	LMT	C2'-C1'-O1'-C1
45	j	101	3PE	C22-C23-C24-C25
52	N	401	CDL	C31-C32-C33-C34
52	h	202	CDL	C54-C55-C56-C57
45	L	701	3PE	C2A-C2B-C2C-C2D
45	Z	202	3PE	C3D-C3E-C3F-C3G
45	h	201	3PE	C26-C27-C28-C29
47	M	604	PC1	C22-C23-C24-C25
52	q	201	CDL	C51-C52-C53-C54
47	M	603	PC1	C31-C32-C33-C34
47	M	604	PC1	C36-C37-C38-C39
52	X	201	CDL	C58-C59-C60-C61
52	d	203	CDL	C73-C74-C75-C76

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Mol	Chain	Res	Type	Atoms
52	q	201	CDL	C31-C32-C33-C34
52	L	702	CDL	OB7-CB5-OB6-CB4
45	Y	203	3PE	C22-C21-O21-C2
52	L	702	CDL	C51-CB5-OB6-CB4
52	h	202	CDL	C11-CA5-OA6-CA4
52	q	201	CDL	C11-CA5-OA6-CA4
45	I	201	3PE	C3A-C3B-C3C-C3D
45	M	602	3PE	C2E-C2F-C2G-C2H
45	Y	201	3PE	C2C-C2D-C2E-C2F
45	Z	201	3PE	C2D-C2E-C2F-C2G
52	X	201	CDL	C41-C42-C43-C44
52	h	202	CDL	C32-C33-C34-C35
45	Z	202	3PE	C21-C22-C23-C24
45	A	201	3PE	C22-C23-C24-C25
45	A	202	3PE	C28-C29-C2A-C2B
45	I	201	3PE	C3E-C3F-C3G-C3H
45	Z	201	3PE	C3A-C3B-C3C-C3D
47	M	603	PC1	O32-C31-O31-C3
45	L	701	3PE	C38-C39-C3A-C3B
45	L	705	3PE	C3D-C3E-C3F-C3G
45	O	403	3PE	C35-C36-C37-C38
45	Y	201	3PE	C23-C24-C25-C26
45	Y	201	3PE	C2D-C2E-C2F-C2G
45	h	203	3PE	C23-C24-C25-C26
47	H	603	PC1	C2A-C2B-C2C-C2D
47	M	603	PC1	C24-C25-C26-C27
48	B	203	LMT	C4-C5-C6-C7
45	f	101	3PE	O13-C11-C12-N
45	L	705	3PE	C2D-C2E-C2F-C2G
52	h	202	CDL	C71-C72-C73-C74
52	L	702	CDL	CB5-C51-C52-C53
52	h	202	CDL	CA5-C11-C12-C13
45	I	201	3PE	C37-C38-C39-C3A
45	Y	202	3PE	C2A-C2B-C2C-C2D
47	H	603	PC1	C32-C31-O31-C3
45	A	201	3PE	C33-C34-C35-C36
45	A	201	3PE	C36-C37-C38-C39
52	X	201	CDL	C20-C21-C22-C23
45	A	203	3PE	C2A-C2B-C2C-C2D
45	K	101	3PE	C34-C35-C36-C37
52	L	702	CDL	C31-C32-C33-C34
52	L	702	CDL	C37-C38-C39-C40

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Mol	Chain	Res	Type	Atoms
52	q	201	CDL	C18-C19-C20-C21
52	q	201	CDL	CA7-C31-C32-C33
45	Y	201	3PE	C32-C33-C34-C35
45	Z	202	3PE	C37-C38-C39-C3A
45	Y	203	3PE	O22-C21-O21-C2
52	h	202	CDL	OA7-CA5-OA6-CA4
52	N	401	CDL	C73-C74-C75-C76
45	f	101	3PE	C23-C24-C25-C26
52	d	203	CDL	C74-C75-C76-C77
45	I	201	3PE	C28-C29-C2A-C2B
45	M	602	3PE	C34-C35-C36-C37
45	Y	201	3PE	C24-C25-C26-C27
48	M	606	LMT	O5'-C5'-C6'-O6'
45	M	602	3PE	C38-C39-C3A-C3B
48	m	201	LMT	O5'-C5'-C6'-O6'
45	K	101	3PE	C3A-C3B-C3C-C3D
45	L	703	3PE	C31-C32-C33-C34
47	B	202	PC1	C35-C36-C37-C38
52	q	201	CDL	OA7-CA5-OA6-CA4
50	F	501	FMN	O2'-C2'-C3'-C4'
45	d	201	3PE	C35-C36-C37-C38
45	d	201	3PE	C2B-C2C-C2D-C2E
52	N	401	CDL	C37-C38-C39-C40
52	h	202	CDL	C51-C52-C53-C54
52	q	201	CDL	C14-C15-C16-C17
45	L	706	3PE	C24-C25-C26-C27
45	h	203	3PE	C29-C2A-C2B-C2C
47	M	603	PC1	C29-C2A-C2B-C2C
48	L	704	LMT	C5-C6-C7-C8
45	L	705	3PE	C33-C34-C35-C36
52	q	201	CDL	C54-C55-C56-C57
52	q	201	CDL	CA5-C11-C12-C13
52	q	201	CDL	CB7-C71-C72-C73
57	U	101	EHZ	C21-C1-C2-C3
58	o	201	MYR	C5-C6-C7-C8
52	d	203	CDL	C42-C43-C44-C45
47	H	603	PC1	O32-C31-O31-C3
45	A	203	3PE	C2B-C2C-C2D-C2E
45	Z	202	3PE	C36-C37-C38-C39
47	H	603	PC1	C31-C32-C33-C34
47	M	603	PC1	C21-C22-C23-C24
45	L	701	3PE	C32-C33-C34-C35

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Mol	Chain	Res	Type	Atoms
45	I	201	3PE	C22-C23-C24-C25
47	O	401	PC1	C23-C24-C25-C26
45	O	405	3PE	C21-C22-C23-C24
45	I	201	3PE	C3D-C3E-C3F-C3G
45	M	602	3PE	C26-C27-C28-C29
45	Z	202	3PE	C25-C26-C27-C28
45	m	202	3PE	C2D-C2E-C2F-C2G
47	H	603	PC1	C2C-C2D-C2E-C2F
52	d	203	CDL	C41-C42-C43-C44
48	m	201	LMT	O5'-C1'-O1'-C1
45	Y	202	3PE	C33-C34-C35-C36
52	X	201	CDL	CB5-C51-C52-C53
52	d	203	CDL	CA7-C31-C32-C33
45	Z	201	3PE	C22-C21-O21-C2
47	H	603	PC1	C22-C21-O21-C2
52	L	702	CDL	C11-CA5-OA6-CA4
52	d	203	CDL	C11-CA5-OA6-CA4
52	d	203	CDL	OB5-CB3-CB4-OB6
45	j	101	3PE	C2C-C2D-C2E-C2F
45	m	202	3PE	C32-C33-C34-C35
47	B	202	PC1	C3C-C3D-C3E-C3F
45	H	601	3PE	C26-C27-C28-C29
45	H	601	3PE	C2B-C2C-C2D-C2E
52	X	201	CDL	C57-C58-C59-C60
45	Z	201	3PE	O22-C21-O21-C2
45	H	601	3PE	C21-C22-C23-C24
48	M	605	LMT	C2'-C1'-O1'-C1
52	L	702	CDL	OA6-CA4-CA6-OA8
45	M	601	3PE	C33-C34-C35-C36
47	B	202	PC1	C36-C37-C38-C39
45	L	703	3PE	C3C-C3D-C3E-C3F
45	Y	202	3PE	C2E-C2F-C2G-C2H
47	M	603	PC1	C35-C36-C37-C38
45	A	202	3PE	C31-C32-C33-C34
45	L	706	3PE	C23-C24-C25-C26
45	Z	202	3PE	C38-C39-C3A-C3B
52	N	401	CDL	C32-C33-C34-C35
45	j	101	3PE	C23-C24-C25-C26
45	Z	201	3PE	C36-C37-C38-C39
52	h	202	CDL	C35-C36-C37-C38
52	N	401	CDL	C33-C34-C35-C36
52	X	201	CDL	C15-C16-C17-C18

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Mol	Chain	Res	Type	Atoms
47	H	603	PC1	O22-C21-O21-C2
45	Y	202	3PE	C22-C21-O21-C2
45	Z	202	3PE	C3A-C3B-C3C-C3D
45	h	201	3PE	C33-C34-C35-C36
48	m	201	LMT	C7-C8-C9-C10
52	h	202	CDL	C57-C58-C59-C60
45	O	405	3PE	C1-O11-P-O13
45	Y	203	3PE	C11-O13-P-O11
52	d	203	CDL	CA3-OA5-PA1-OA2
52	h	202	CDL	CA2-OA2-PA1-OA5
48	B	203	LMT	C5'-C4'-O1B-C1B
45	A	202	3PE	O11-C1-C2-C3
45	L	703	3PE	O11-C1-C2-C3
45	O	403	3PE	O11-C1-C2-C3
52	d	203	CDL	OA5-CA3-CA4-CA6
47	M	603	PC1	C2A-C2B-C2C-C2D
48	M	605	LMT	C1-C2-C3-C4
52	N	401	CDL	CA2-C1-CB2-OB2
52	L	702	CDL	OA7-CA5-OA6-CA4
52	h	202	CDL	C53-C54-C55-C56
45	Y	202	3PE	C2C-C2D-C2E-C2F
52	N	401	CDL	C60-C61-C62-C63
45	A	203	3PE	C1-C2-C3-O31
45	L	701	3PE	C1-C2-C3-O31
45	L	703	3PE	C1-C2-C3-O31
45	Z	202	3PE	C1-C2-C3-O31
45	d	201	3PE	C1-C2-C3-O31
47	B	202	PC1	C1-C2-C3-O31
47	H	603	PC1	C1-C2-C3-O31
47	O	401	PC1	C1-C2-C3-O31
52	L	702	CDL	CA3-CA4-CA6-OA8
52	h	202	CDL	CB3-CB4-CB6-OB8
52	h	202	CDL	C52-C53-C54-C55
52	q	201	CDL	CA3-CA4-CA6-OA8
45	d	201	3PE	C32-C33-C34-C35
45	A	203	3PE	C3F-C3G-C3H-C3I
52	N	401	CDL	C16-C17-C18-C19
45	A	203	3PE	C3C-C3D-C3E-C3F
45	Z	201	3PE	C3F-C3G-C3H-C3I
48	M	606	LMT	C4-C5-C6-C7
52	d	203	CDL	C71-C72-C73-C74
45	A	201	3PE	C27-C28-C29-C2A

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Mol	Chain	Res	Type	Atoms
48	B	203	LMT	C5-C6-C7-C8
57	T	101	EHZ	O4-C15-C16-O5
45	d	201	3PE	C34-C35-C36-C37
52	X	201	CDL	C24-C25-C26-C27
52	h	202	CDL	C73-C74-C75-C76
45	A	202	3PE	C36-C37-C38-C39
45	H	601	3PE	C2C-C2D-C2E-C2F
45	Z	202	3PE	C3B-C3C-C3D-C3E
45	j	101	3PE	C2F-C2G-C2H-C2I
52	L	702	CDL	C53-C54-C55-C56
52	L	702	CDL	C56-C57-C58-C59
52	X	201	CDL	C54-C55-C56-C57
45	A	202	3PE	C33-C34-C35-C36
45	L	705	3PE	C32-C31-O31-C3
45	L	705	3PE	C3B-C3C-C3D-C3E
48	Y	204	LMT	C1-C2-C3-C4
45	A	203	3PE	C22-C23-C24-C25
45	K	101	3PE	C2A-C2B-C2C-C2D
58	o	201	MYR	C10-C11-C12-C13
45	L	701	3PE	C1-C2-O21-C21
48	Y	204	LMT	O5B-C1B-O1B-C4'
47	O	401	PC1	C24-C25-C26-C27
52	N	401	CDL	C35-C36-C37-C38
45	I	201	3PE	O11-C1-C2-O21
45	L	705	3PE	O11-C1-C2-O21
52	h	202	CDL	OB5-CB3-CB4-OB6
45	M	602	3PE	C35-C36-C37-C38
52	X	201	CDL	C34-C35-C36-C37
45	Y	203	3PE	O31-C31-C32-C33
45	A	203	3PE	O21-C2-C3-O31
45	L	706	3PE	O21-C2-C3-O31
52	q	201	CDL	C53-C54-C55-C56
47	H	603	PC1	C35-C36-C37-C38
45	L	706	3PE	C32-C33-C34-C35
48	L	704	LMT	C9-C10-C11-C12
48	B	203	LMT	C2-C3-C4-C5
52	L	702	CDL	C31-CA7-OA8-CA6
47	B	202	PC1	C28-C29-C2A-C2B
52	X	201	CDL	CA2-C1-CB2-OB2
52	d	203	CDL	OA7-CA5-OA6-CA4
52	L	702	CDL	C71-CB7-OB8-CB6
45	d	201	3PE	C26-C27-C28-C29

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Mol	Chain	Res	Type	Atoms
52	L	702	CDL	C62-C63-C64-C65
45	f	101	3PE	C32-C33-C34-C35
45	m	202	3PE	C27-C28-C29-C2A
47	M	604	PC1	C3E-C3F-C3G-C3H
45	A	201	3PE	O11-C1-C2-C3
45	K	101	3PE	O11-C1-C2-C3
45	L	705	3PE	O11-C1-C2-C3
45	M	602	3PE	O11-C1-C2-C3
45	O	405	3PE	O11-C1-C2-C3
52	N	401	CDL	OA5-CA3-CA4-CA6
52	d	203	CDL	OB5-CB3-CB4-CB6
45	Z	201	3PE	C33-C34-C35-C36
45	O	405	3PE	O13-C11-C12-N
45	j	101	3PE	O13-C11-C12-N
47	M	604	PC1	C32-C33-C34-C35
45	Y	203	3PE	C31-C32-C33-C34
45	L	705	3PE	O32-C31-O31-C3
45	m	202	3PE	C34-C35-C36-C37
45	A	203	3PE	C2D-C2E-C2F-C2G
45	h	201	3PE	C2-C1-O11-P
45	A	202	3PE	C29-C2A-C2B-C2C
48	B	203	LMT	C2-C1-O1'-C1'
45	L	705	3PE	C2F-C2G-C2H-C2I
52	N	401	CDL	C39-C40-C41-C42
45	A	203	3PE	C23-C24-C25-C26
45	Y	202	3PE	C1-C2-C3-O31
45	Z	201	3PE	C1-C2-C3-O31
52	L	702	CDL	CB3-CB4-CB6-OB8
45	L	705	3PE	C31-C32-C33-C34
45	A	203	3PE	C3D-C3E-C3F-C3G
45	O	405	3PE	C34-C35-C36-C37
45	f	101	3PE	O21-C21-C22-C23
45	M	601	3PE	C32-C33-C34-C35
47	H	603	PC1	C2B-C2C-C2D-C2E
45	f	101	3PE	C33-C34-C35-C36
48	H	602	LMT	C9-C10-C11-C12
54	O	404	DGT	PG-O3B-PB-O3A
45	d	201	3PE	C21-C22-C23-C24
45	I	201	3PE	C3C-C3D-C3E-C3F
45	h	201	3PE	C27-C28-C29-C2A
48	H	602	LMT	C5'-C4'-O1B-C1B
45	L	705	3PE	C36-C37-C38-C39

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Mol	Chain	Res	Type	Atoms
45	M	601	3PE	C2A-C2B-C2C-C2D
47	M	603	PC1	C27-C28-C29-C2A
45	A	201	3PE	O11-C1-C2-O21
45	O	403	3PE	O11-C1-C2-O21
45	O	405	3PE	O11-C1-C2-O21
52	d	203	CDL	OA5-CA3-CA4-OA6
45	I	201	3PE	C32-C31-O31-C3
52	N	401	CDL	C61-C62-C63-C64
52	X	201	CDL	C19-C20-C21-C22
45	I	201	3PE	C36-C37-C38-C39
45	Z	201	3PE	C2A-C2B-C2C-C2D
45	A	203	3PE	O21-C21-C22-C23
45	M	602	3PE	C36-C37-C38-C39
47	B	202	PC1	C38-C39-C3A-C3B
45	M	602	3PE	C3D-C3E-C3F-C3G
52	N	401	CDL	C51-C52-C53-C54
45	L	703	3PE	O21-C2-C3-O31
45	d	201	3PE	O21-C2-C3-O31
52	q	201	CDL	OA6-CA4-CA6-OA8
45	A	201	3PE	O21-C21-C22-C23
45	L	706	3PE	C2D-C2E-C2F-C2G
45	h	201	3PE	C28-C29-C2A-C2B
45	A	202	3PE	C35-C36-C37-C38
45	Y	202	3PE	O22-C21-O21-C2
45	Z	202	3PE	C39-C3A-C3B-C3C
47	M	603	PC1	C36-C37-C38-C39
52	L	702	CDL	OA9-CA7-OA8-CA6
45	Z	201	3PE	C38-C39-C3A-C3B
45	h	201	3PE	C2A-C2B-C2C-C2D
45	L	706	3PE	C2-C1-O11-P
50	F	501	FMN	C4'-C5'-O5'-P
52	L	702	CDL	CB4-CB3-OB5-PB2
52	N	401	CDL	C1-CA2-OA2-PA1
47	H	603	PC1	C2F-C2G-C2H-C2I
48	M	605	LMT	C3-C4-C5-C6
52	N	401	CDL	C74-C75-C76-C77
57	U	101	EHZ	C2-C1-C21-C22
52	L	702	CDL	OB9-CB7-OB8-CB6
45	Y	202	3PE	C36-C37-C38-C39
47	H	603	PC1	C33-C34-C35-C36
45	j	101	3PE	O11-C1-C2-C3
45	m	202	3PE	O11-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
52	X	201	CDL	O1-C1-CB2-OB2
45	h	201	3PE	C24-C25-C26-C27
52	X	201	CDL	C56-C57-C58-C59
52	N	401	CDL	C77-C78-C79-C80
52	d	203	CDL	C52-C51-CB5-OB6
45	Z	202	3PE	C35-C36-C37-C38
45	j	101	3PE	C2D-C2E-C2F-C2G
57	T	101	EHZ	C18-C17-C20-O6
52	X	201	CDL	C52-C53-C54-C55
45	f	101	3PE	C34-C35-C36-C37
52	N	401	CDL	C53-C54-C55-C56
52	L	702	CDL	C55-C56-C57-C58
45	Y	203	3PE	C1-C2-C3-O31
45	d	201	3PE	O11-C1-C2-O21
45	f	101	3PE	O11-C1-C2-O21
45	j	101	3PE	O11-C1-C2-O21
45	m	202	3PE	O11-C1-C2-O21
52	L	702	CDL	OA5-CA3-CA4-OA6
52	N	401	CDL	OA5-CA3-CA4-OA6
52	h	202	CDL	OA5-CA3-CA4-OA6
52	X	201	CDL	C33-C34-C35-C36
52	X	201	CDL	C12-C13-C14-C15
57	U	101	EHZ	O1-C7-C8-C9
45	I	201	3PE	O32-C31-O31-C3
45	O	405	3PE	C33-C34-C35-C36
57	T	101	EHZ	C4-C5-C6-C7
45	K	101	3PE	C25-C26-C27-C28
58	o	201	MYR	C6-C7-C8-C9
52	h	202	CDL	C34-C35-C36-C37
45	K	101	3PE	C21-C22-C23-C24
45	O	403	3PE	C31-C32-C33-C34
52	L	702	CDL	C59-C60-C61-C62
45	Y	202	3PE	C28-C29-C2A-C2B
45	I	201	3PE	C3B-C3C-C3D-C3E
45	Z	202	3PE	C23-C24-C25-C26
52	L	702	CDL	C42-C43-C44-C45
52	d	203	CDL	CB3-OB5-PB2-OB2
52	h	202	CDL	CA3-OA5-PA1-OA2
48	H	602	LMT	C3'-C4'-O1B-C1B
52	X	201	CDL	C53-C54-C55-C56
45	A	203	3PE	C27-C28-C29-C2A
45	L	705	3PE	C2-C1-O11-P

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Mol	Chain	Res	Type	Atoms
45	O	405	3PE	C2-C1-O11-P
45	f	101	3PE	C2-C1-O11-P
45	j	101	3PE	C2-C1-O11-P
45	K	101	3PE	C1-O11-P-O12
45	K	101	3PE	C11-O13-P-O12
45	L	706	3PE	C1-O11-P-O12
45	M	601	3PE	C11-O13-P-O14
45	O	405	3PE	C1-O11-P-O12
45	f	101	3PE	C1-O11-P-O14
45	h	203	3PE	C1-O11-P-O14
47	H	603	PC1	C11-O13-P-O12
47	H	603	PC1	C1-O11-P-O12
47	M	604	PC1	C1-O11-P-O14
47	O	401	PC1	C1-O11-P-O12
47	d	202	PC1	C11-O13-P-O14
52	L	702	CDL	CA3-OA5-PA1-OA4
52	N	401	CDL	CA3-OA5-PA1-OA4
52	X	201	CDL	CA2-OA2-PA1-OA4
52	X	201	CDL	CA3-OA5-PA1-OA4
52	d	203	CDL	CA3-OA5-PA1-OA4
52	d	203	CDL	CB2-OB2-PB2-OB3
52	d	203	CDL	CB2-OB2-PB2-OB4
52	h	202	CDL	CA2-OA2-PA1-OA4
45	m	202	3PE	C21-C22-C23-C24
52	X	201	CDL	C38-C39-C40-C41
45	d	201	3PE	O11-C1-C2-C3
45	f	101	3PE	O11-C1-C2-C3
52	h	202	CDL	OB5-CB3-CB4-CB6
45	Z	201	3PE	C21-C22-C23-C24
45	h	203	3PE	C25-C26-C27-C28
52	L	702	CDL	C39-C40-C41-C42
45	A	202	3PE	C12-C11-O13-P
45	K	101	3PE	C12-C11-O13-P
45	M	601	3PE	C12-C11-O13-P
45	Y	201	3PE	C12-C11-O13-P
45	Y	203	3PE	C12-C11-O13-P
45	f	101	3PE	C12-C11-O13-P
45	m	202	3PE	C12-C11-O13-P
50	F	501	FMN	C1'-C2'-C3'-O3'
45	A	203	3PE	C25-C26-C27-C28
47	d	202	PC1	C35-C36-C37-C38
45	L	706	3PE	C32-C31-O31-C3

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Mol	Chain	Res	Type	Atoms
52	X	201	CDL	C55-C56-C57-C58
45	L	703	3PE	O11-C1-C2-O21
45	h	203	3PE	O11-C1-C2-O21
55	P	501	NDP	O4D-C4D-C5D-O5D
45	O	403	3PE	C24-C25-C26-C27
45	d	201	3PE	C3C-C3D-C3E-C3F
48	m	201	LMT	O1'-C1-C2-C3
55	P	501	NDP	O4D-C1D-N1N-C6N
45	M	601	3PE	C39-C3A-C3B-C3C
45	M	602	3PE	C3A-C3B-C3C-C3D
45	L	706	3PE	C1-C2-C3-O31
45	f	101	3PE	C1-C2-C3-O31
47	M	603	PC1	O13-C11-C12-N
47	M	604	PC1	O13-C11-C12-N
47	O	401	PC1	O13-C11-C12-N
52	X	201	CDL	CB3-CB4-CB6-OB8
45	f	101	3PE	O21-C2-C3-O31
47	B	202	PC1	O21-C2-C3-O31
47	O	401	PC1	O21-C2-C3-O31
52	X	201	CDL	OB6-CB4-CB6-OB8
45	I	201	3PE	C26-C27-C28-C29
52	L	702	CDL	C34-C35-C36-C37
45	L	706	3PE	C2B-C2C-C2D-C2E
52	N	401	CDL	CB5-C51-C52-C53
45	L	706	3PE	C2C-C2D-C2E-C2F
45	Y	202	3PE	C26-C27-C28-C29
45	Y	202	3PE	C34-C35-C36-C37
45	L	705	3PE	C3A-C3B-C3C-C3D
47	d	202	PC1	C36-C37-C38-C39
45	M	601	3PE	C26-C27-C28-C29
45	L	706	3PE	O32-C31-O31-C3
45	M	602	3PE	C25-C26-C27-C28
45	H	601	3PE	C23-C24-C25-C26
57	T	101	EHZ	C19-C17-C20-O6
45	Y	201	3PE	C33-C34-C35-C36
45	I	201	3PE	O11-C1-C2-C3
45	h	203	3PE	O11-C1-C2-C3
45	A	202	3PE	C22-C23-C24-C25
52	d	203	CDL	C37-C38-C39-C40
52	q	201	CDL	C1-CB2-OB2-PB2
45	M	601	3PE	O21-C21-C22-C23
45	H	601	3PE	C2A-C2B-C2C-C2D

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Mol	Chain	Res	Type	Atoms
45	Y	202	3PE	O21-C21-C22-C23
45	m	202	3PE	C33-C34-C35-C36
52	N	401	CDL	C55-C56-C57-C58
57	T	101	EHZ	C21-C22-C23-C24
47	H	603	PC1	O21-C2-C3-O31
52	L	702	CDL	OB6-CB4-CB6-OB8
52	h	202	CDL	OB6-CB4-CB6-OB8
45	I	201	3PE	C11-O13-P-O11
45	L	703	3PE	C11-O13-P-O11
45	L	705	3PE	C11-O13-P-O11
45	M	602	3PE	C11-O13-P-O11
45	O	403	3PE	C11-O13-P-O11
45	O	405	3PE	C11-O13-P-O11
45	Z	201	3PE	C11-O13-P-O11
45	Z	202	3PE	C11-O13-P-O11
45	h	203	3PE	C11-O13-P-O11
47	B	202	PC1	C11-O13-P-O11
45	j	101	3PE	C2A-C2B-C2C-C2D
45	I	201	3PE	C34-C35-C36-C37
45	d	201	3PE	C33-C34-C35-C36
47	B	202	PC1	C26-C27-C28-C29
52	L	702	CDL	C61-C62-C63-C64
45	L	701	3PE	C2-C1-O11-P
45	M	602	3PE	C2-C1-O11-P
45	Y	201	3PE	C2-C1-O11-P
48	H	602	LMT	C5-C6-C7-C8
45	L	701	3PE	C32-C31-O31-C3
52	X	201	CDL	CB7-C71-C72-C73
45	L	701	3PE	O32-C31-O31-C3
45	f	101	3PE	C21-C22-C23-C24
52	h	202	CDL	C11-C12-C13-C14
52	h	202	CDL	OA5-CA3-CA4-CA6
48	Y	204	LMT	C2B-C1B-O1B-C4'
45	M	601	3PE	C38-C39-C3A-C3B
48	Y	204	LMT	C6-C7-C8-C9
45	L	703	3PE	C21-C22-C23-C24
45	Y	203	3PE	C33-C34-C35-C36
52	L	702	CDL	C14-C15-C16-C17
45	L	703	3PE	C34-C35-C36-C37
52	N	401	CDL	C19-C20-C21-C22
45	Z	202	3PE	C34-C35-C36-C37
47	M	604	PC1	C27-C28-C29-C2A

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Mol	Chain	Res	Type	Atoms
52	L	702	CDL	C71-C72-C73-C74
52	q	201	CDL	CB5-C51-C52-C53
47	M	603	PC1	C23-C24-C25-C26
45	Y	201	3PE	C32-C31-O31-C3
48	M	605	LMT	O5'-C1'-O1'-C1
45	f	101	3PE	C22-C23-C24-C25
52	L	702	CDL	C54-C55-C56-C57
52	N	401	CDL	C75-C76-C77-C78
45	Z	201	3PE	C2C-C2D-C2E-C2F
48	L	704	LMT	C7-C8-C9-C10
47	M	604	PC1	C3-C2-O21-C21
52	h	202	CDL	C76-C77-C78-C79
45	Z	202	3PE	C33-C34-C35-C36
52	q	201	CDL	C16-C17-C18-C19
45	A	202	3PE	C11-O13-P-O11
45	f	101	3PE	C1-O11-P-O13
52	L	702	CDL	CA3-OA5-PA1-OA2
45	L	706	3PE	O31-C31-C32-C33
48	H	602	LMT	C3-C4-C5-C6
52	q	201	CDL	C32-C33-C34-C35
47	H	603	PC1	C2-C1-O11-P
45	H	601	3PE	C29-C2A-C2B-C2C
52	X	201	CDL	C32-C33-C34-C35
47	M	604	PC1	C3D-C3E-C3F-C3G
52	N	401	CDL	C11-C12-C13-C14
57	T	101	EHZ	C11-C10-S1-C9
45	Y	202	3PE	O21-C2-C3-O31
45	Z	201	3PE	O21-C2-C3-O31
45	Y	202	3PE	C32-C33-C34-C35
48	Y	204	LMT	C3'-C4'-O1B-C1B
47	B	202	PC1	C39-C3A-C3B-C3C
45	Y	201	3PE	O32-C31-O31-C3
52	X	201	CDL	C39-C40-C41-C42
47	d	202	PC1	C3D-C3E-C3F-C3G
45	Y	203	3PE	O32-C31-C32-C33
45	L	706	3PE	C31-C32-C33-C34
45	I	201	3PE	C27-C28-C29-C2A
47	B	202	PC1	C34-C35-C36-C37
48	m	201	LMT	C6-C7-C8-C9
52	q	201	CDL	C52-C53-C54-C55
52	L	702	CDL	OA5-CA3-CA4-CA6
45	A	203	3PE	C3E-C3F-C3G-C3H

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Mol	Chain	Res	Type	Atoms
45	I	201	3PE	C2B-C2C-C2D-C2E
45	K	101	3PE	C36-C37-C38-C39
48	L	704	LMT	C2-C3-C4-C5
48	Y	204	LMT	C2'-C1'-O1'-C1
48	m	201	LMT	C2-C3-C4-C5
45	f	101	3PE	O22-C21-O21-C2
48	M	606	LMT	C1-C2-C3-C4
57	U	101	EHZ	C3-C4-C5-C6
45	M	602	3PE	C1-O11-P-O13
48	M	605	LMT	C7-C8-C9-C10
58	o	201	MYR	C3-C4-C5-C6
45	j	101	3PE	O21-C21-C22-C23
47	d	202	PC1	C3B-C3C-C3D-C3E
45	m	202	3PE	C2C-C2D-C2E-C2F
48	Y	204	LMT	C2-C1-O1'-C1'
52	L	702	CDL	C12-C11-CA5-OA6
52	N	401	CDL	C57-C58-C59-C60
45	A	203	3PE	O31-C31-C32-C33
45	K	101	3PE	O21-C21-C22-C23
45	L	701	3PE	O21-C21-C22-C23
52	N	401	CDL	C52-C51-CB5-OB6
52	d	203	CDL	C31-C32-C33-C34
45	h	201	3PE	C29-C2A-C2B-C2C
45	f	101	3PE	O22-C21-C22-C23
45	M	602	3PE	C22-C23-C24-C25
47	M	603	PC1	O11-C1-C2-O21
45	Z	201	3PE	O31-C31-C32-C33
48	Y	204	LMT	C5'-C4'-O1B-C1B
45	A	203	3PE	O22-C21-C22-C23
52	d	203	CDL	C77-C78-C79-C80
45	Z	201	3PE	C28-C29-C2A-C2B
47	H	603	PC1	C26-C27-C28-C29
57	T	101	EHZ	O1-C7-C8-C9
47	B	202	PC1	O21-C21-C22-C23
45	Z	201	3PE	C2F-C2G-C2H-C2I
48	Y	204	LMT	C5-C6-C7-C8
45	L	701	3PE	C36-C37-C38-C39
45	M	601	3PE	C28-C29-C2A-C2B
45	O	403	3PE	C23-C24-C25-C26
45	A	201	3PE	O31-C31-C32-C33
45	m	202	3PE	O21-C21-C22-C23
47	d	202	PC1	O21-C21-C22-C23

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Mol	Chain	Res	Type	Atoms
47	M	603	PC1	O31-C31-C32-C33
52	L	702	CDL	C52-C51-CB5-OB6
45	A	201	3PE	O22-C21-C22-C23
54	O	404	DGT	C5'-O5'-PA-O3A
55	P	501	NDP	C5B-O5B-PA-O3
47	M	604	PC1	C3B-C3C-C3D-C3E
45	f	101	3PE	C22-C21-O21-C2
45	A	202	3PE	O21-C21-C22-C23
45	Z	202	3PE	O31-C31-C32-C33
50	F	501	FMN	O3'-C3'-C4'-C5'
45	O	403	3PE	C2-C1-O11-P
45	d	201	3PE	C2A-C2B-C2C-C2D
47	B	202	PC1	O31-C31-C32-C33
45	Z	201	3PE	C27-C28-C29-C2A
52	q	201	CDL	C73-C74-C75-C76
55	P	501	NDP	PA-O3-PN-O1N
47	H	603	PC1	C2E-C2F-C2G-C2H
52	q	201	CDL	C19-C20-C21-C22
45	K	101	3PE	O22-C21-C22-C23
52	X	201	CDL	C52-C51-CB5-OB6
48	M	605	LMT	O5B-C1B-O1B-C4'
45	h	203	3PE	C24-C25-C26-C27
52	L	702	CDL	C12-C11-CA5-OA7
45	A	203	3PE	O32-C31-C32-C33
45	Z	201	3PE	O32-C31-C32-C33
45	j	101	3PE	O22-C21-C22-C23
52	N	401	CDL	C52-C51-CB5-OB7
45	A	201	3PE	C1-C2-C3-O31
47	B	202	PC1	O32-C31-C32-C33
47	d	202	PC1	O22-C21-C22-C23
45	H	601	3PE	C2F-C2G-C2H-C2I
52	q	201	CDL	C72-C71-CB7-OB8
45	h	201	3PE	C34-C35-C36-C37
45	Z	202	3PE	O32-C31-C32-C33
45	K	101	3PE	C35-C36-C37-C38
45	L	706	3PE	C36-C37-C38-C39
45	K	101	3PE	C11-O13-P-O14
45	L	703	3PE	C11-O13-P-O14
45	j	101	3PE	C11-O13-P-O14
47	B	202	PC1	C11-O13-P-O14
47	M	604	PC1	C1-O11-P-O12
52	N	401	CDL	CA3-OA5-PA1-OA3

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Mol	Chain	Res	Type	Atoms
52	N	401	CDL	CB3-OB5-PB2-OB3
52	X	201	CDL	CB3-OB5-PB2-OB3
55	P	501	NDP	C2N-C3N-C7N-N7N
45	A	201	3PE	O32-C31-C32-C33
47	B	202	PC1	O22-C21-C22-C23
45	O	403	3PE	O13-C11-C12-N
52	N	401	CDL	C52-C53-C54-C55
54	O	404	DGT	PB-O3B-PG-O3G
45	I	201	3PE	O31-C31-C32-C33
45	m	202	3PE	O22-C21-C22-C23
47	M	603	PC1	O32-C31-C32-C33
45	A	201	3PE	C12-C11-O13-P
45	L	701	3PE	C12-C11-O13-P
45	Y	202	3PE	C12-C11-O13-P
45	Z	201	3PE	C12-C11-O13-P
45	h	201	3PE	C12-C11-O13-P
57	T	101	EHZ	O4-C15-C16-C17
45	L	701	3PE	O22-C21-C22-C23
47	d	202	PC1	C37-C38-C39-C3A
45	Z	201	3PE	C3C-C3D-C3E-C3F
45	H	601	3PE	O21-C21-C22-C23
45	O	403	3PE	O21-C21-C22-C23
45	d	201	3PE	O31-C31-C32-C33
45	m	202	3PE	O31-C31-C32-C33
52	h	202	CDL	C52-C51-CB5-OB6
45	A	202	3PE	O22-C21-C22-C23
47	B	202	PC1	C3E-C3F-C3G-C3H
45	L	703	3PE	O21-C21-C22-C23
52	L	702	CDL	C41-C42-C43-C44
45	h	201	3PE	O22-C21-O21-C2
45	L	705	3PE	C37-C38-C39-C3A
45	Z	202	3PE	O11-C1-C2-O21
52	L	702	CDL	C52-C51-CB5-OB7
52	X	201	CDL	C52-C51-CB5-OB7
52	q	201	CDL	C52-C51-CB5-OB6
45	A	201	3PE	C2F-C2G-C2H-C2I
48	Y	204	LMT	C3-C4-C5-C6
52	q	201	CDL	C52-C51-CB5-OB7
45	Y	202	3PE	O31-C31-C32-C33
45	L	706	3PE	C26-C27-C28-C29
45	m	202	3PE	O32-C31-C32-C33
52	q	201	CDL	C72-C71-CB7-OB9

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Mol	Chain	Res	Type	Atoms
47	M	604	PC1	O31-C31-C32-C33
45	L	703	3PE	O22-C21-C22-C23
52	h	202	CDL	OB9-CB7-OB8-CB6
52	h	202	CDL	C52-C51-CB5-OB7

There are no ring outliers.

47 monomers are involved in 106 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
52	d	203	CDL	2	0
45	A	201	3PE	2	0
47	B	202	PC1	2	0
48	M	605	LMT	8	0
47	O	401	PC1	2	0
46	I	203	SF4	1	0
48	L	704	LMT	2	0
57	U	101	EHZ	1	0
45	L	706	3PE	3	0
48	m	201	LMT	3	0
45	L	705	3PE	1	0
45	Y	202	3PE	1	0
57	T	101	EHZ	2	0
45	m	202	3PE	1	0
45	M	602	3PE	4	0
52	X	201	CDL	10	0
52	h	202	CDL	2	0
45	M	601	3PE	2	0
54	O	404	DGT	1	0
52	q	201	CDL	1	0
45	A	202	3PE	2	0
47	d	202	PC1	2	0
48	M	606	LMT	4	0
50	F	501	FMN	2	0
48	H	602	LMT	2	0
55	P	501	NDP	4	0
52	N	401	CDL	1	0
47	M	603	PC1	1	0
45	Y	201	3PE	2	0
45	A	203	3PE	2	0
45	H	601	3PE	3	0
45	f	101	3PE	1	0
52	L	702	CDL	6	0

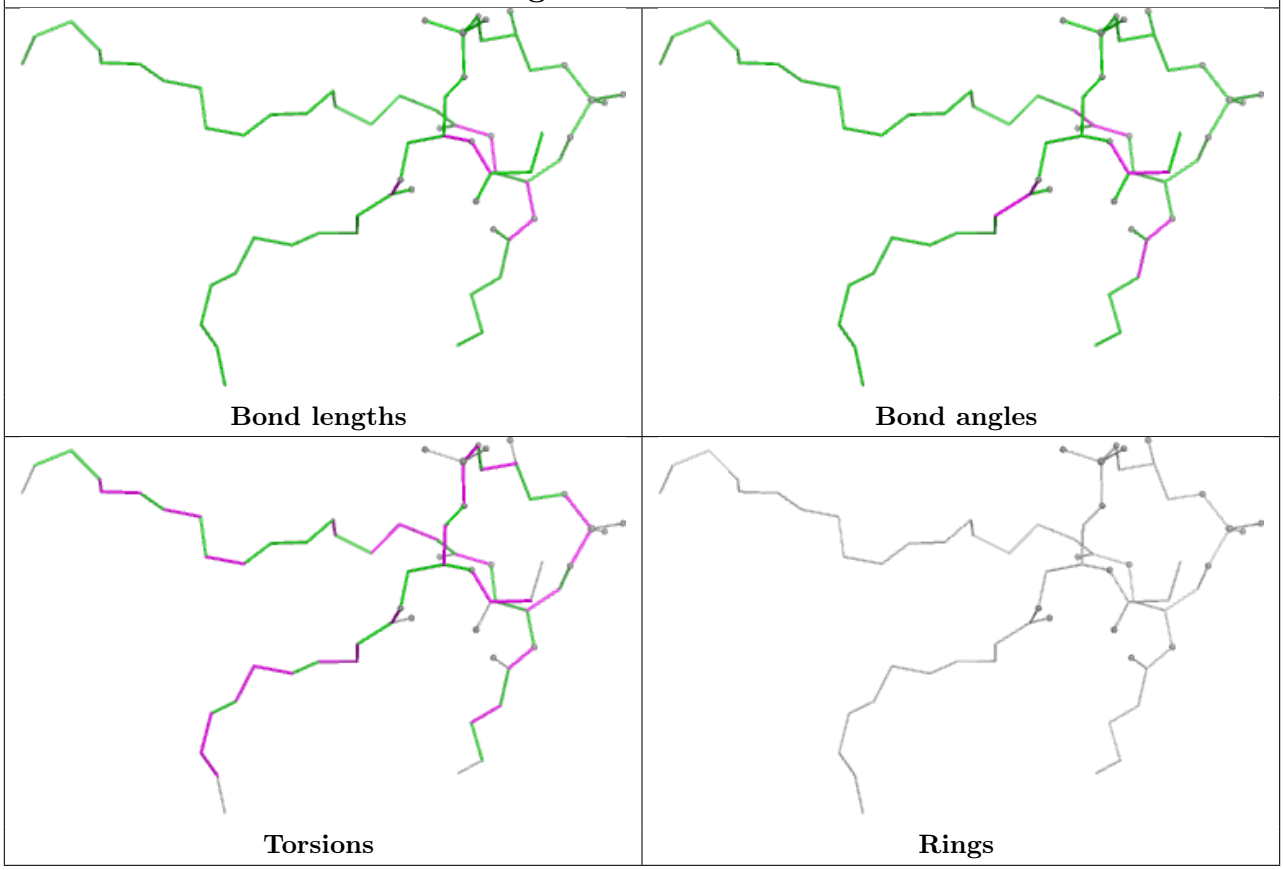
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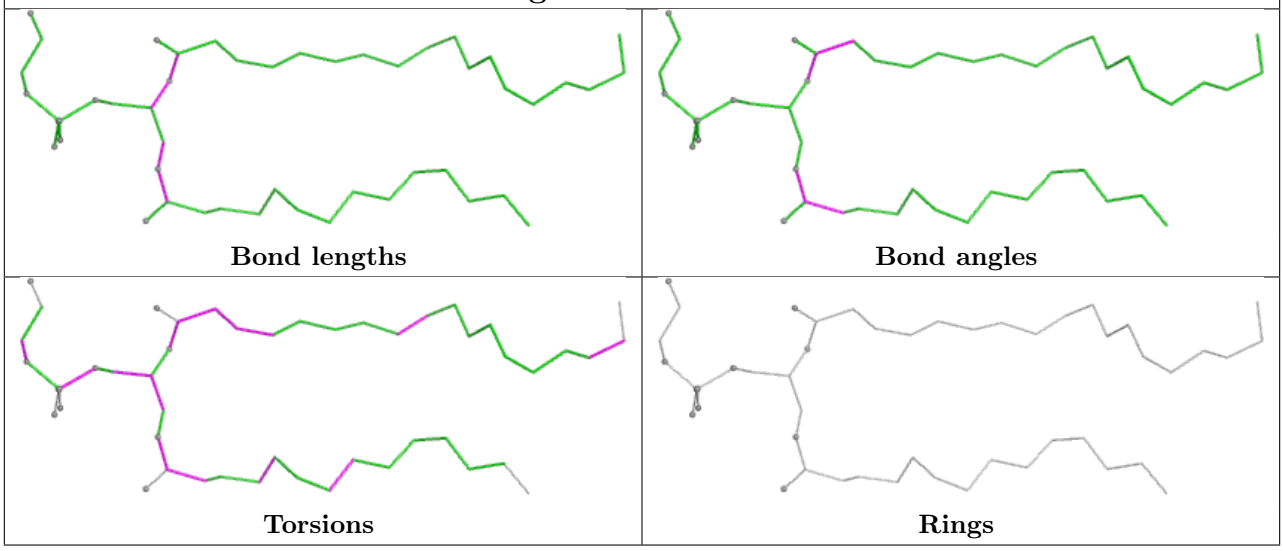
Mol	Chain	Res	Type	Clashes	Symm-Clashes
45	K	101	3PE	3	0
45	O	405	3PE	4	0
48	Y	204	LMT	2	0
45	O	403	3PE	1	0
45	j	101	3PE	2	0
45	Z	201	3PE	2	0
48	B	203	LMT	4	0
45	h	201	3PE	1	0
47	H	603	PC1	2	0
45	L	701	3PE	2	0
47	M	604	PC1	5	0
45	I	201	3PE	3	0
45	L	703	3PE	3	0
45	h	203	3PE	1	0

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

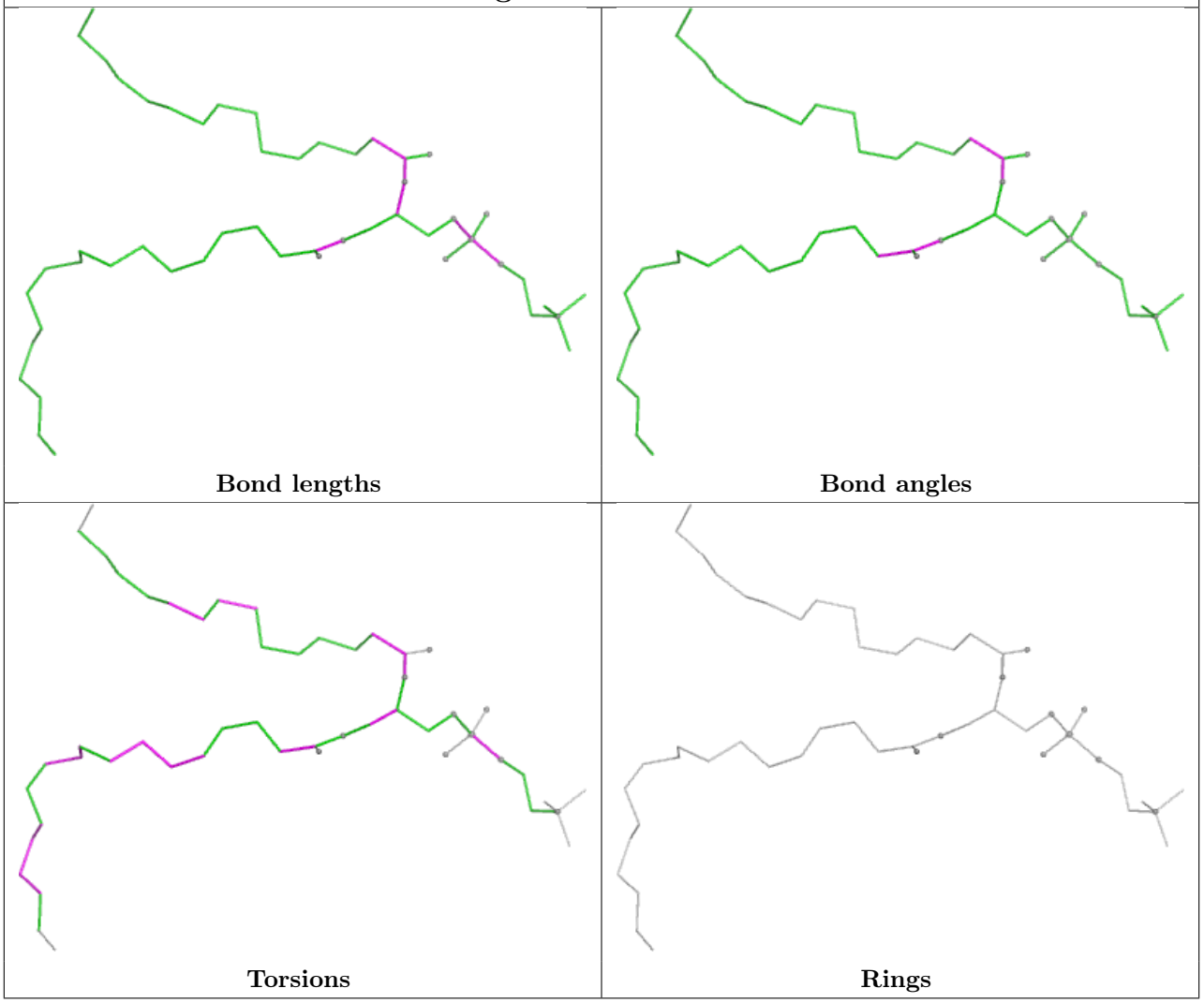
Ligand CDL d 203



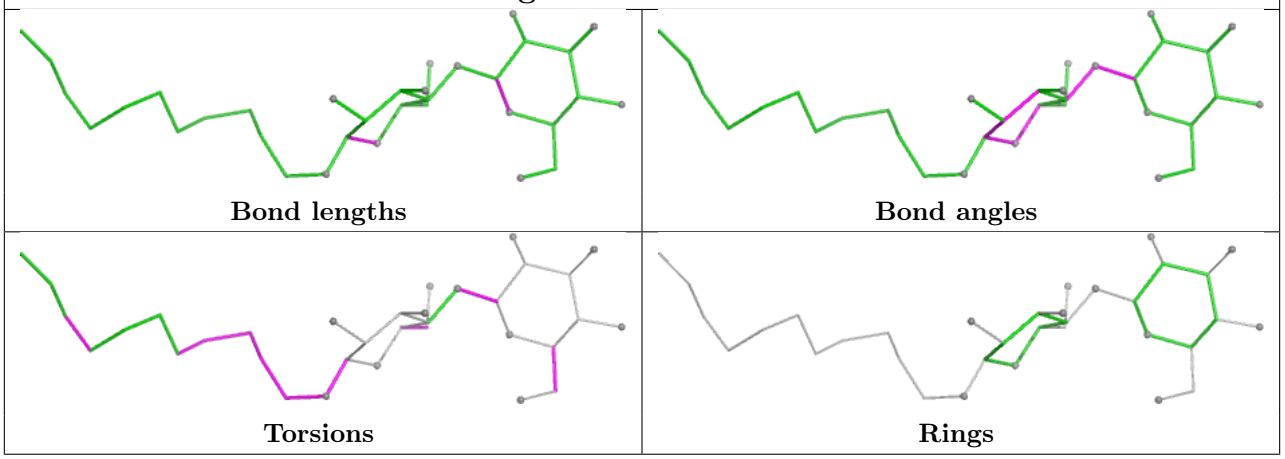
Ligand 3PE A 201



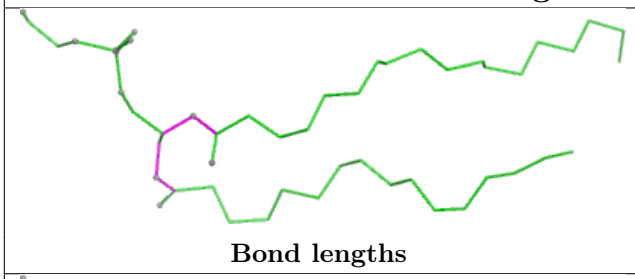
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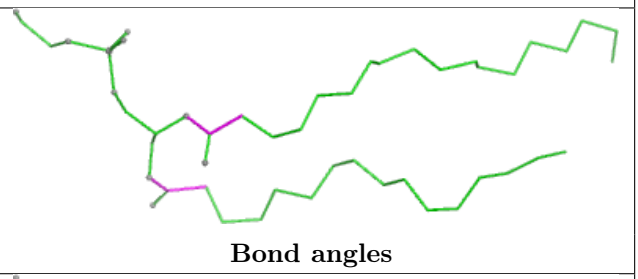
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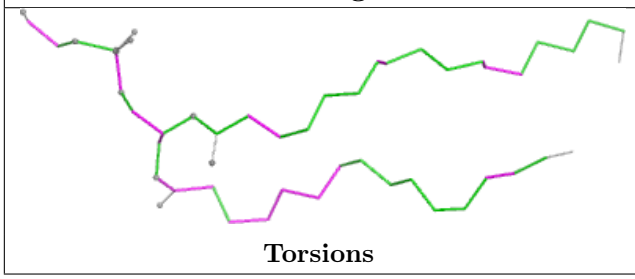
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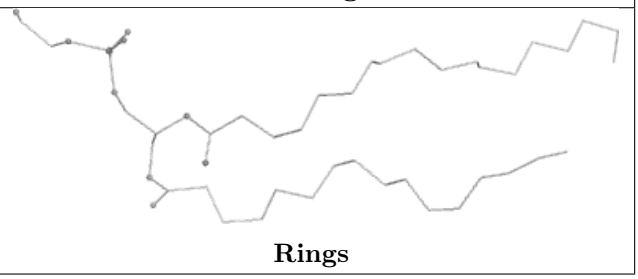
Bond lengths



Bond angles

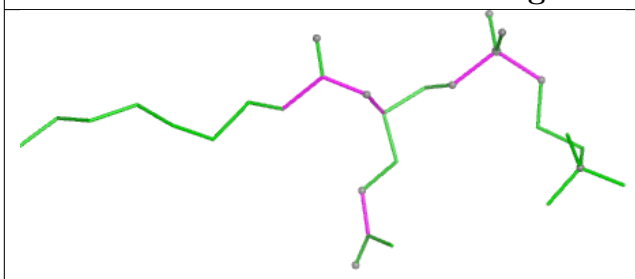


Torsions

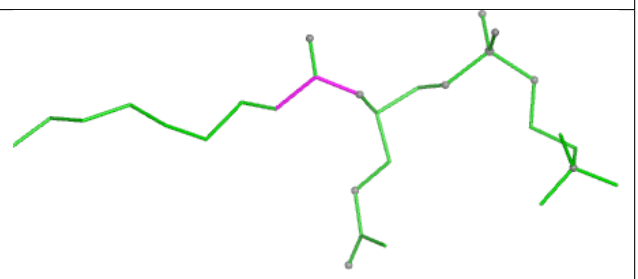


Rings

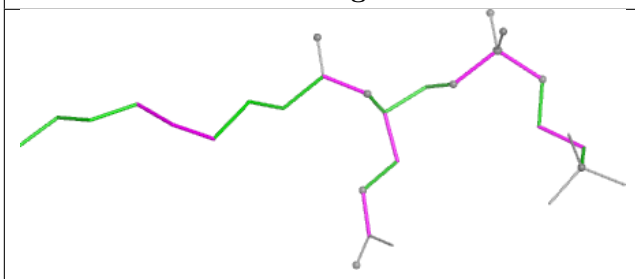
Ligand PC1 O 401



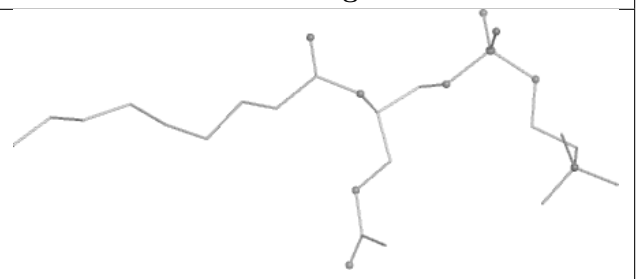
Bond lengths



Bond angles

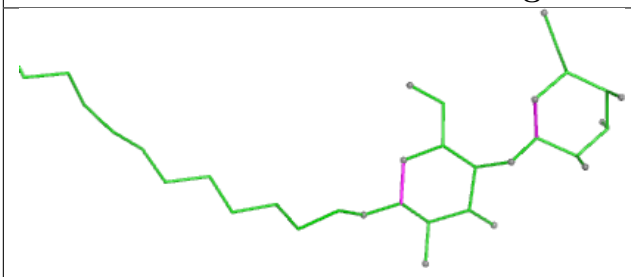


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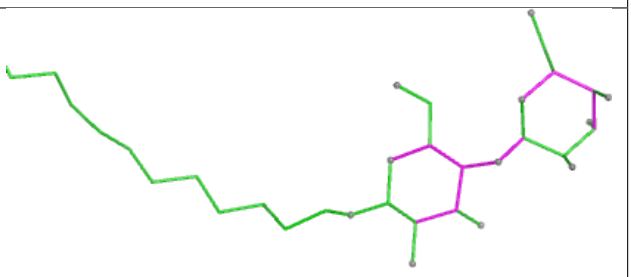


Rings

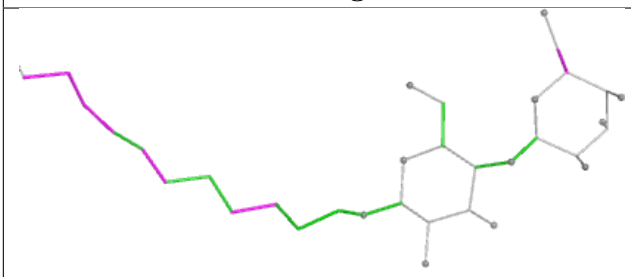
Ligand LMT L 704



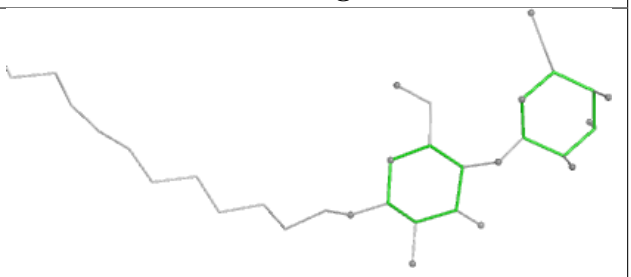
Bond lengths



Bond angles

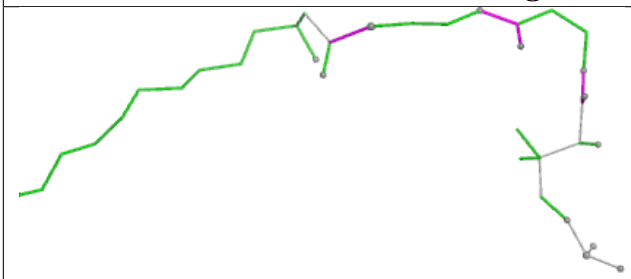


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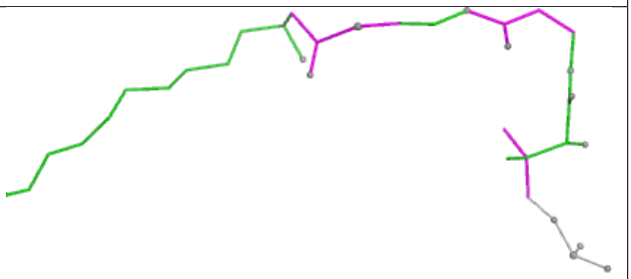


Rings

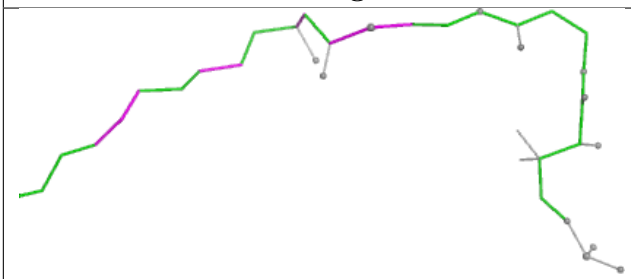
Ligand EHZ U 101



Bond lengths



Bond angles

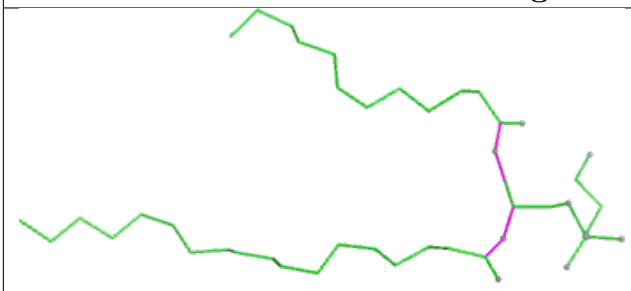


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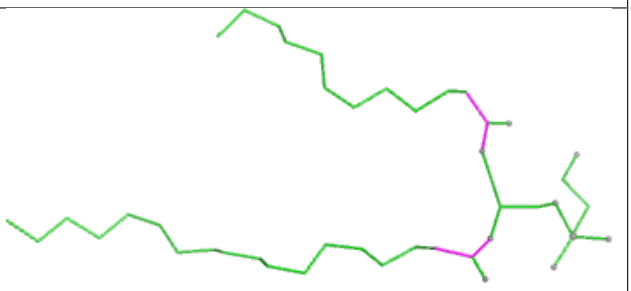


Rings

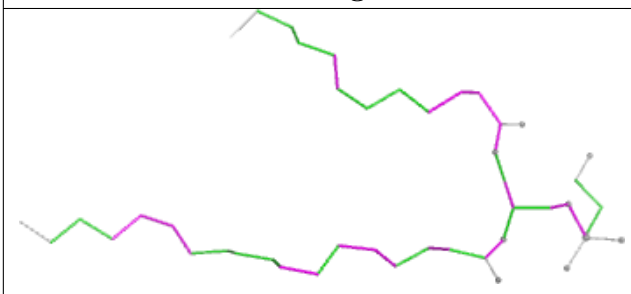
Ligand 3PE L 706



Bond lengths



Bond angles

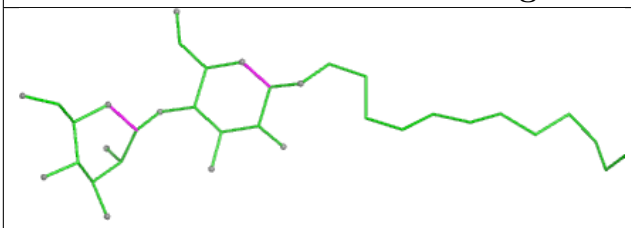


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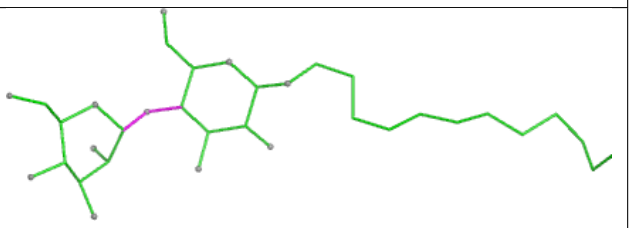


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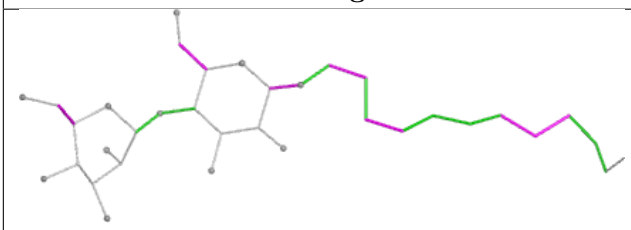
Ligand LMT m 201



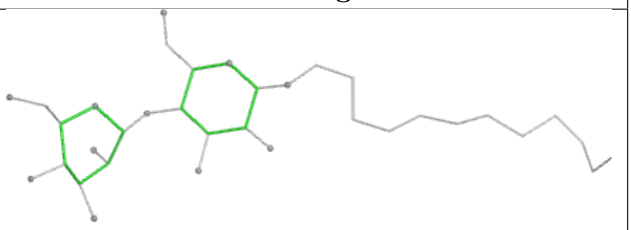
Bond lengths



Bond angles

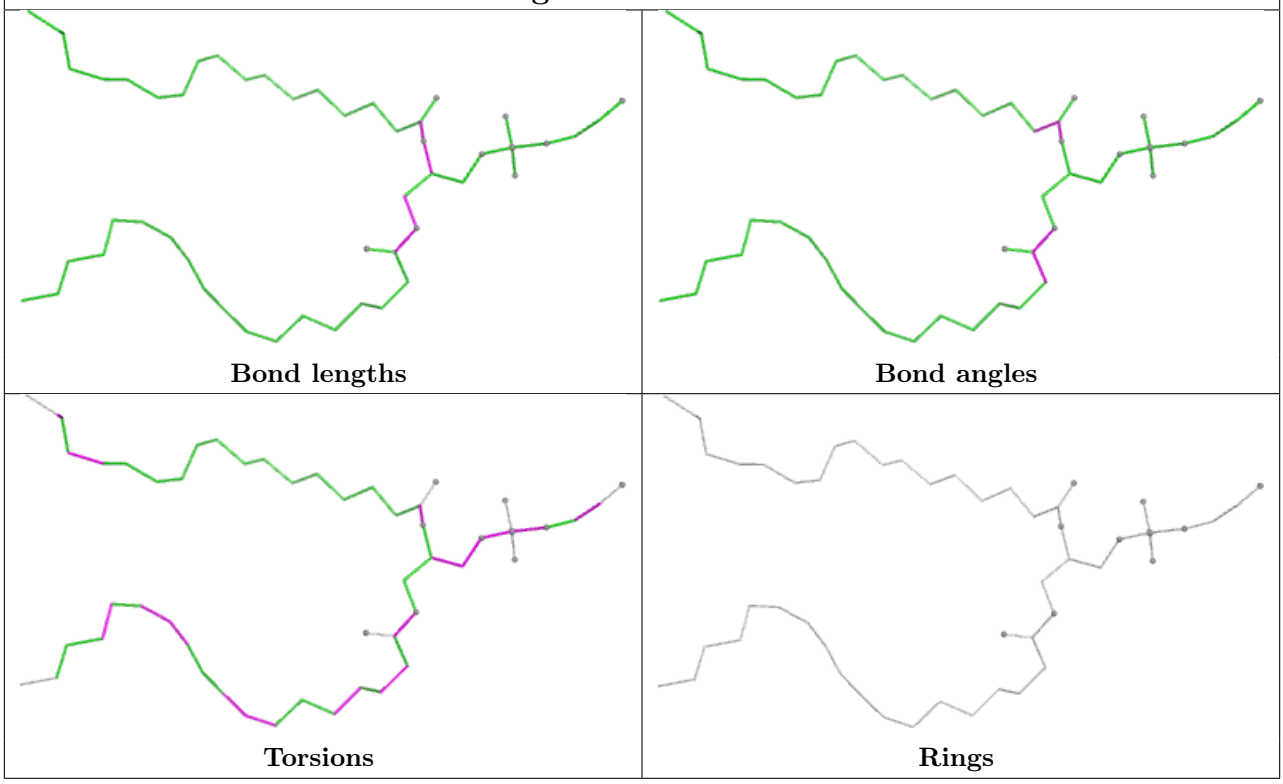


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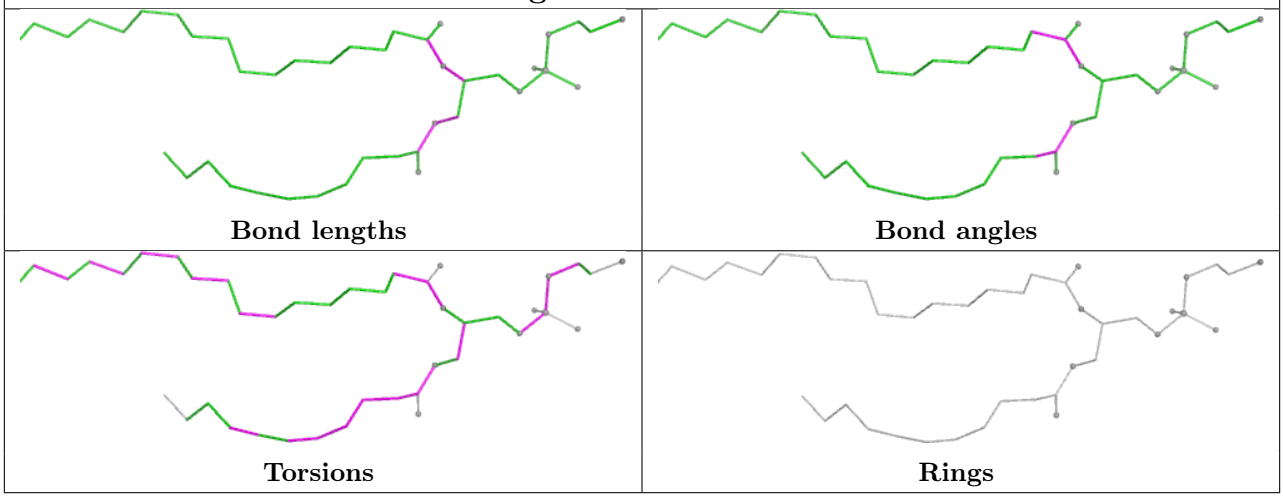


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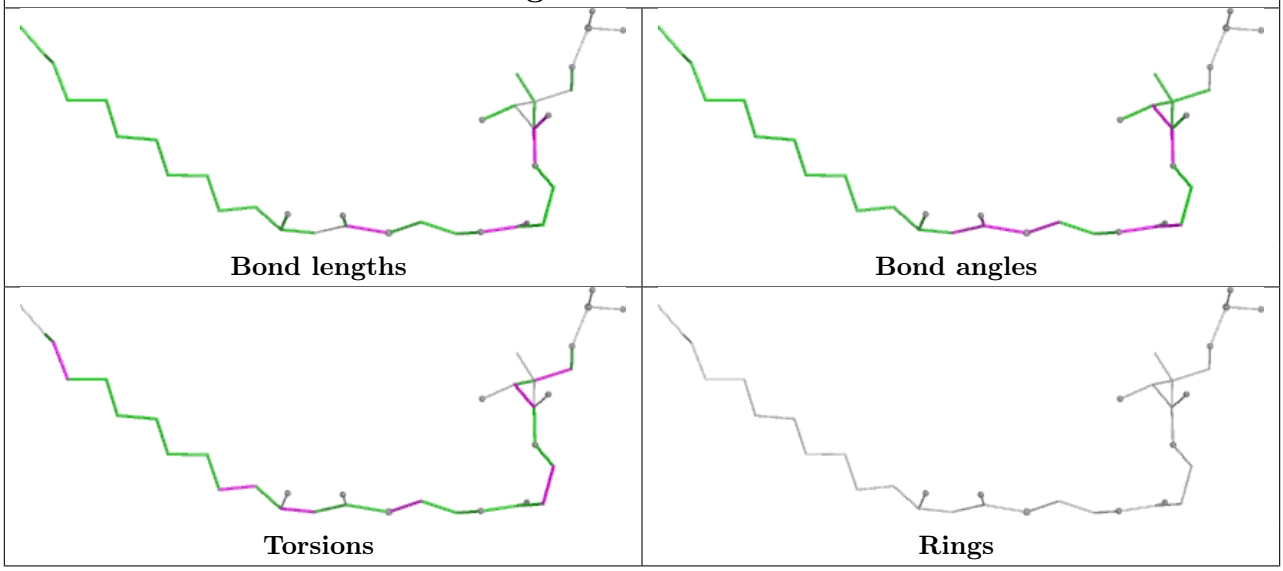
Ligand 3PE L 705



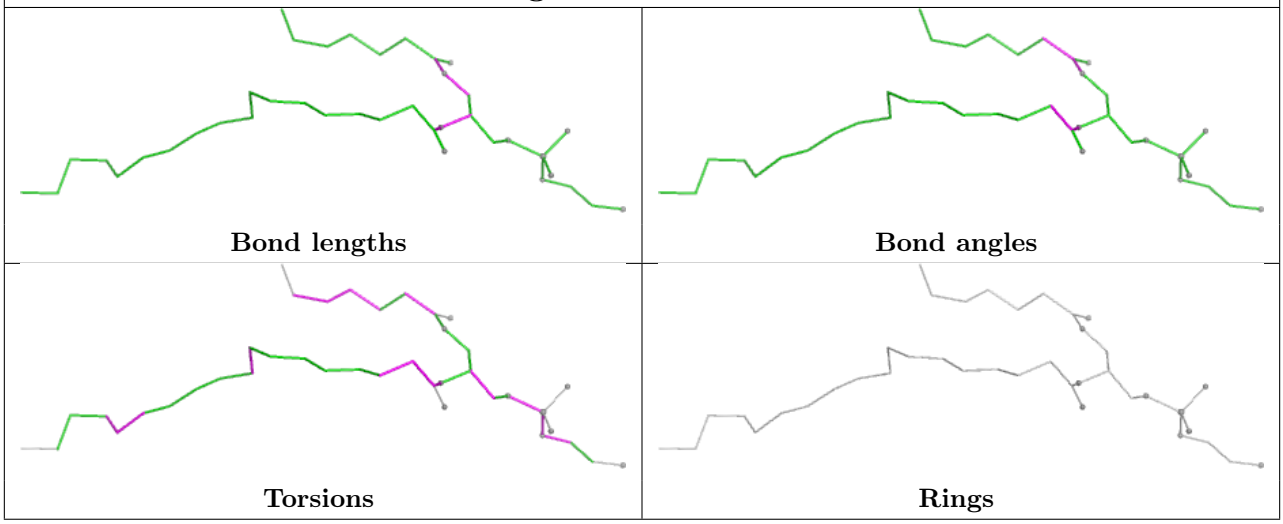
Ligand 3PE Y 202



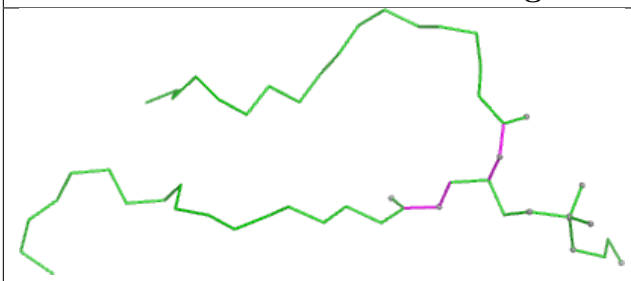
Ligand EHZ T 101



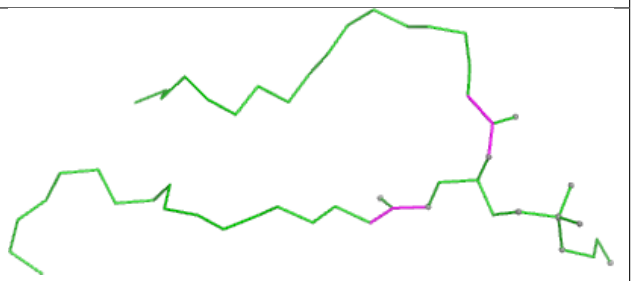
Ligand 3PE m 202



Ligand 3PE M 602



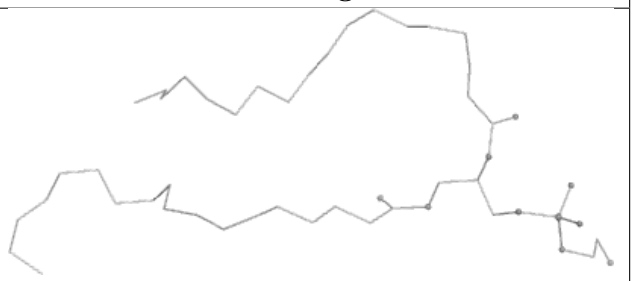
Bond lengths



Bond angles

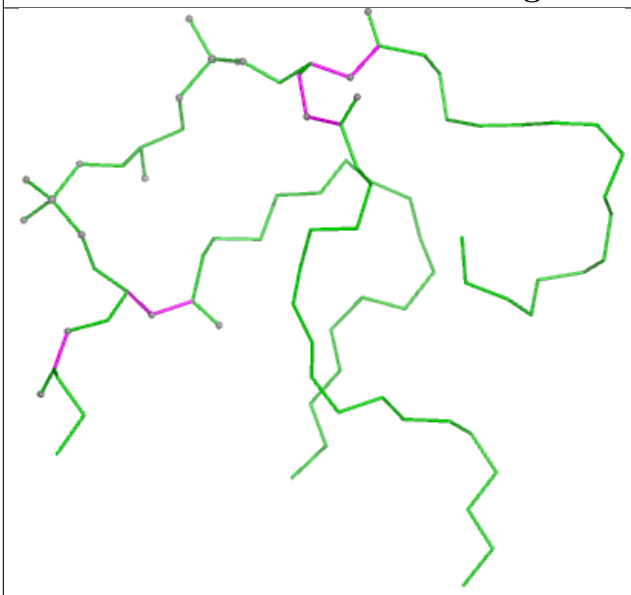


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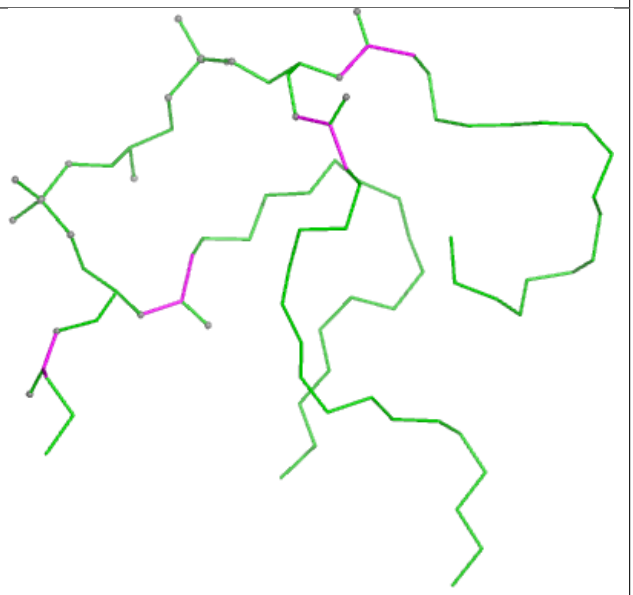


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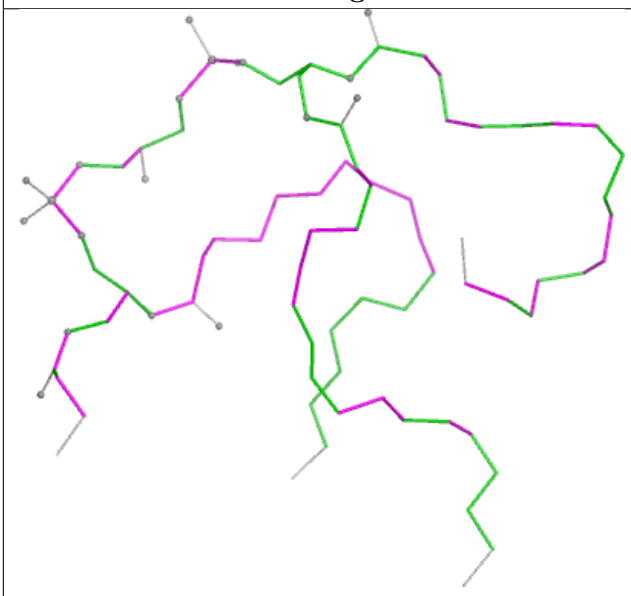
Ligand CDL X 201



Bond lengths



Bond angles

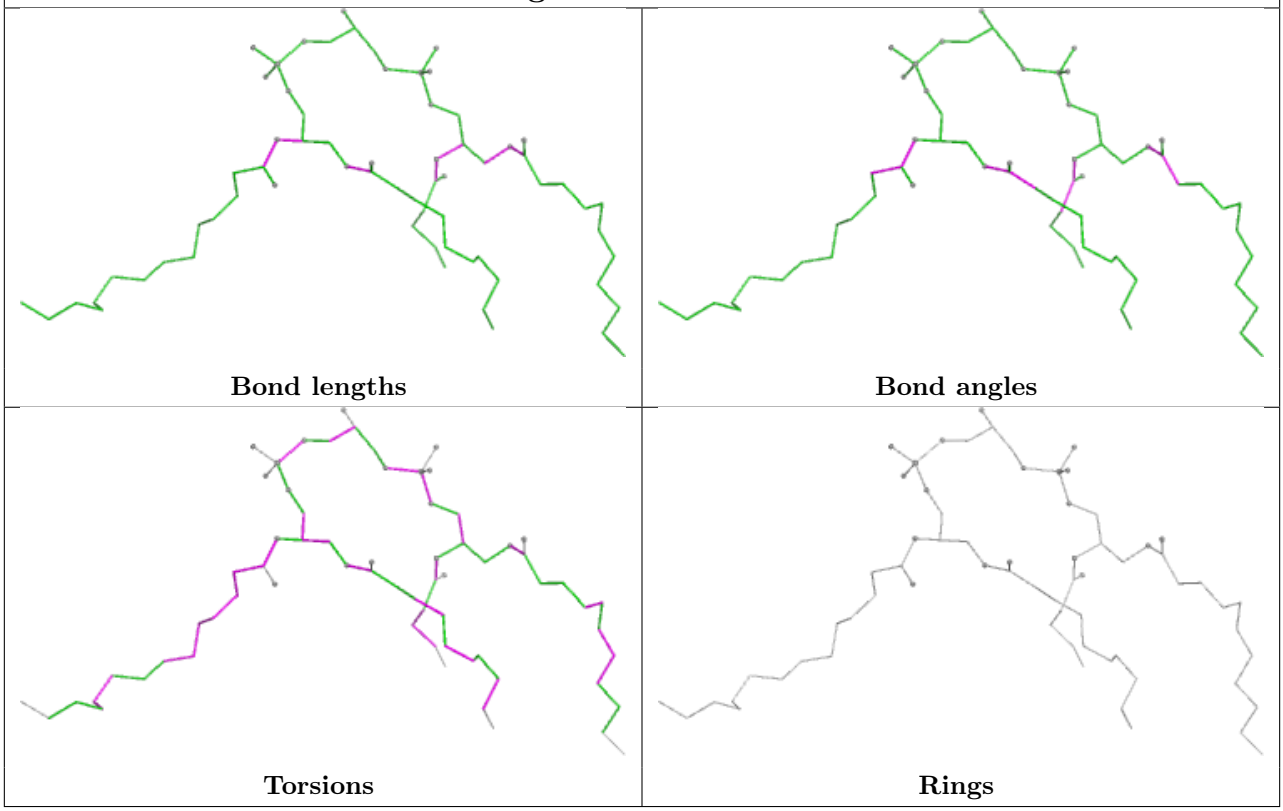


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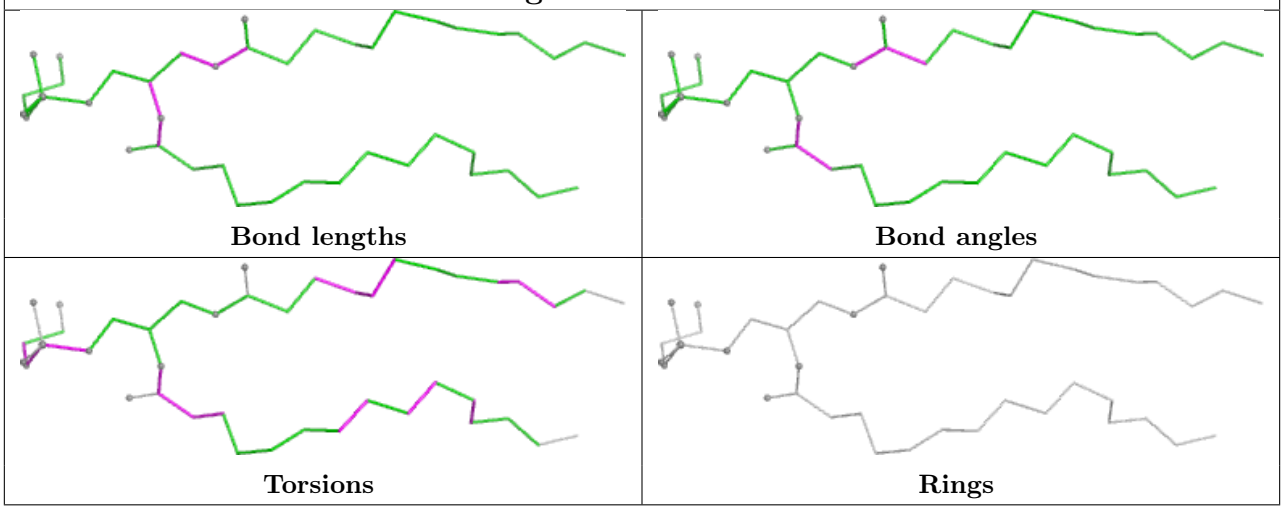


Rings

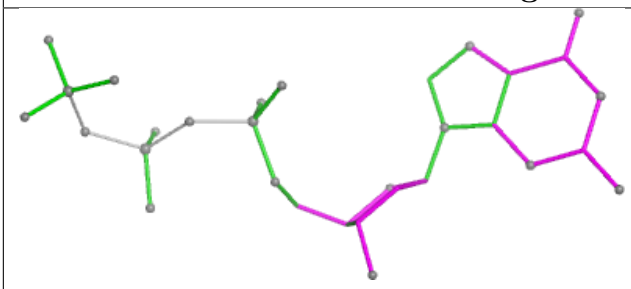
Ligand CDL h 202



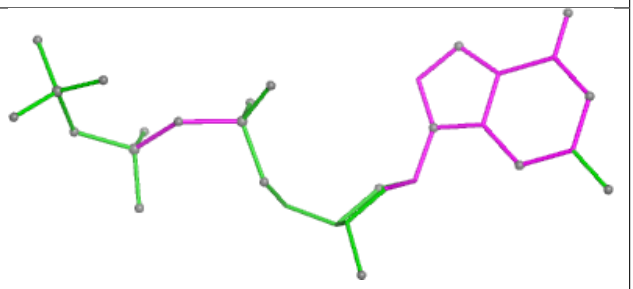
Ligand 3PE M 601



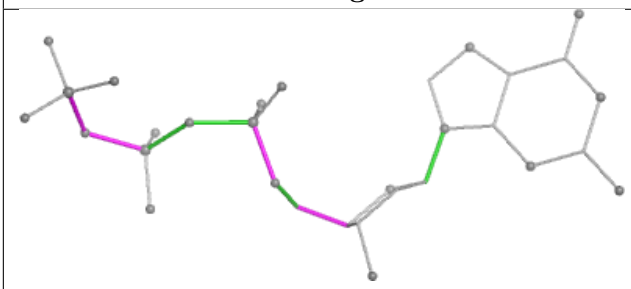
Ligand DGT O 404



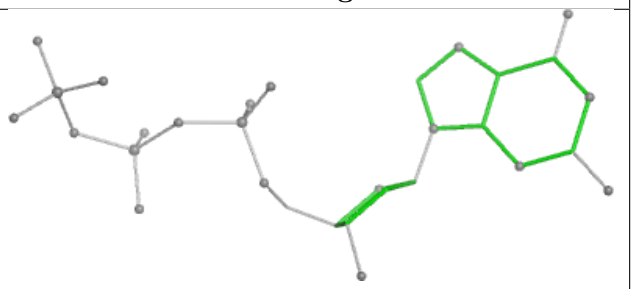
Bond lengths



Bond angles

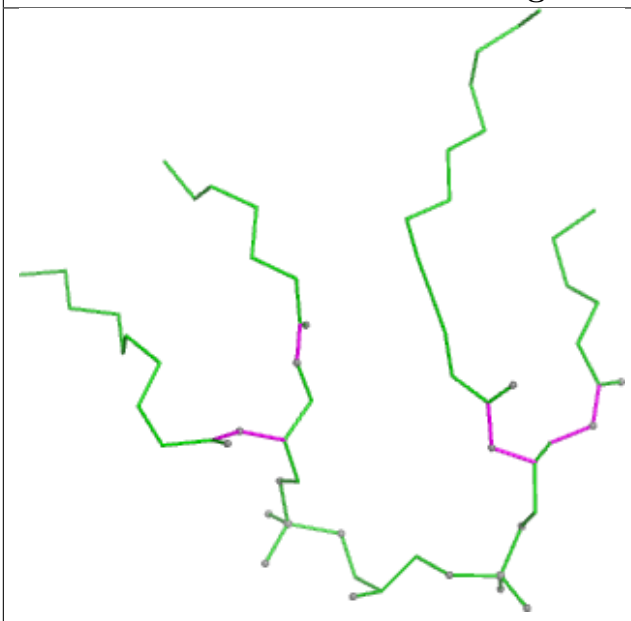


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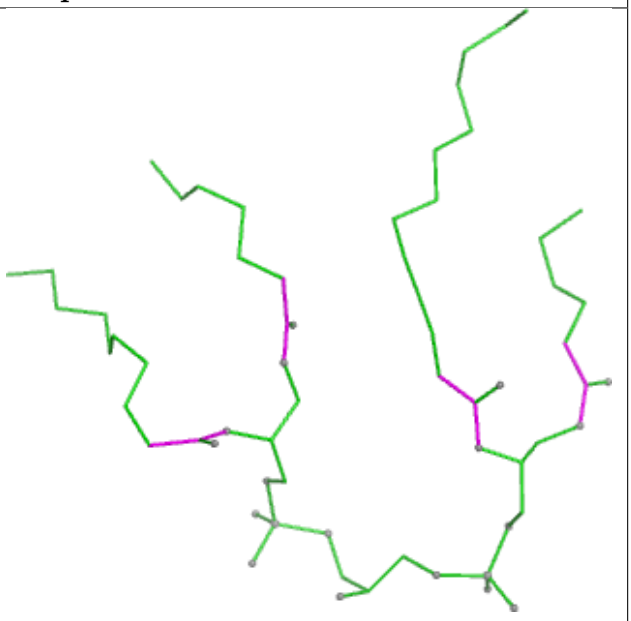


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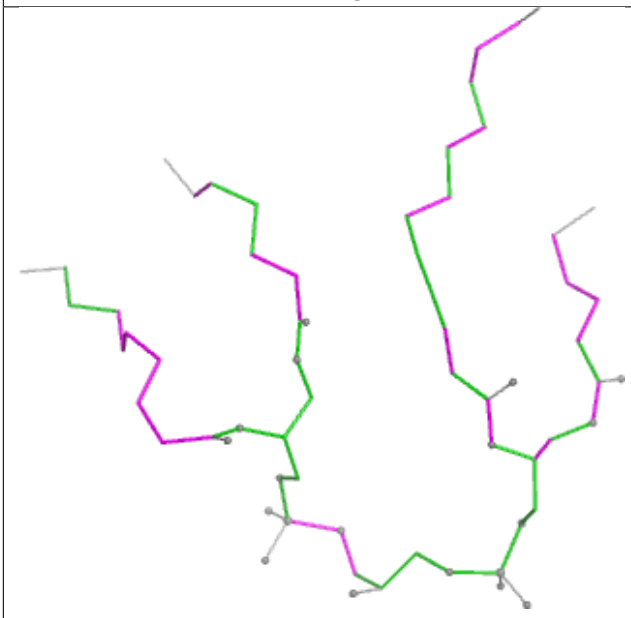
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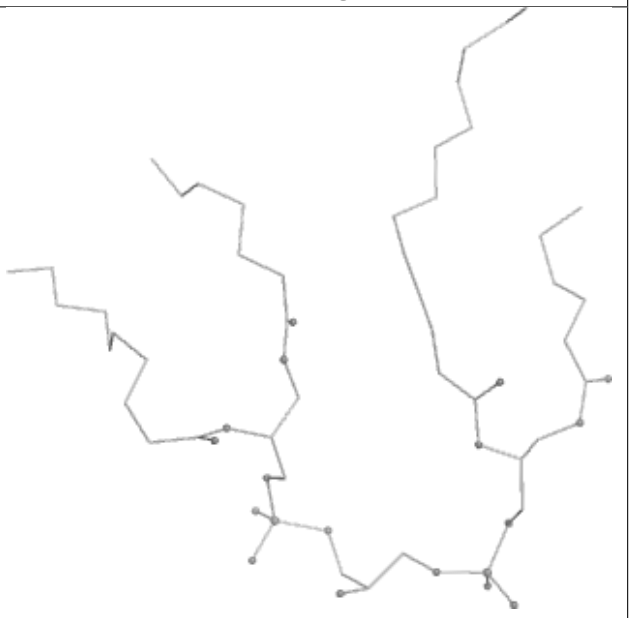
Bond lengths



Bond angles

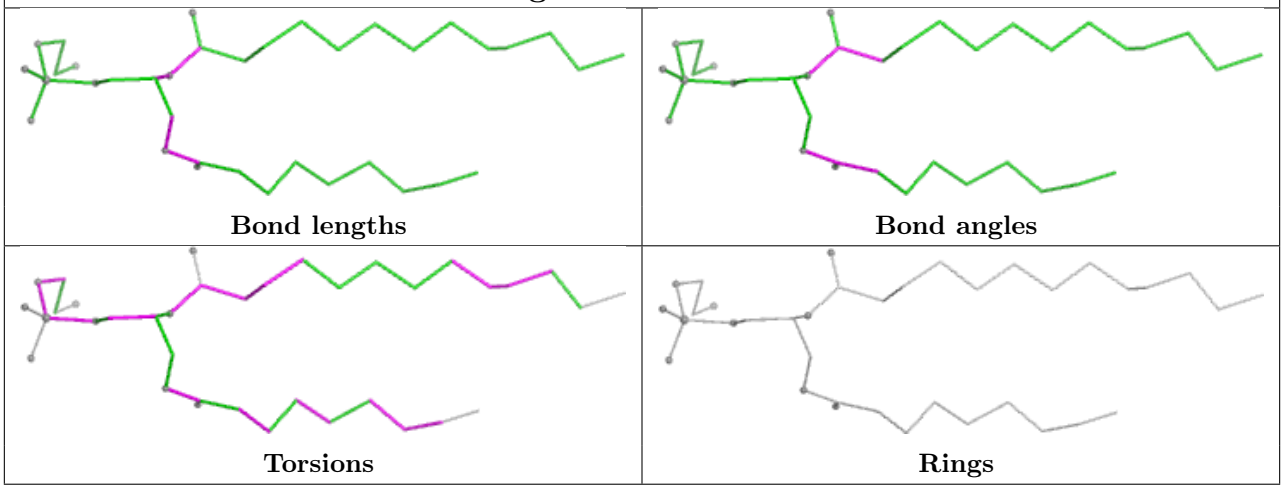


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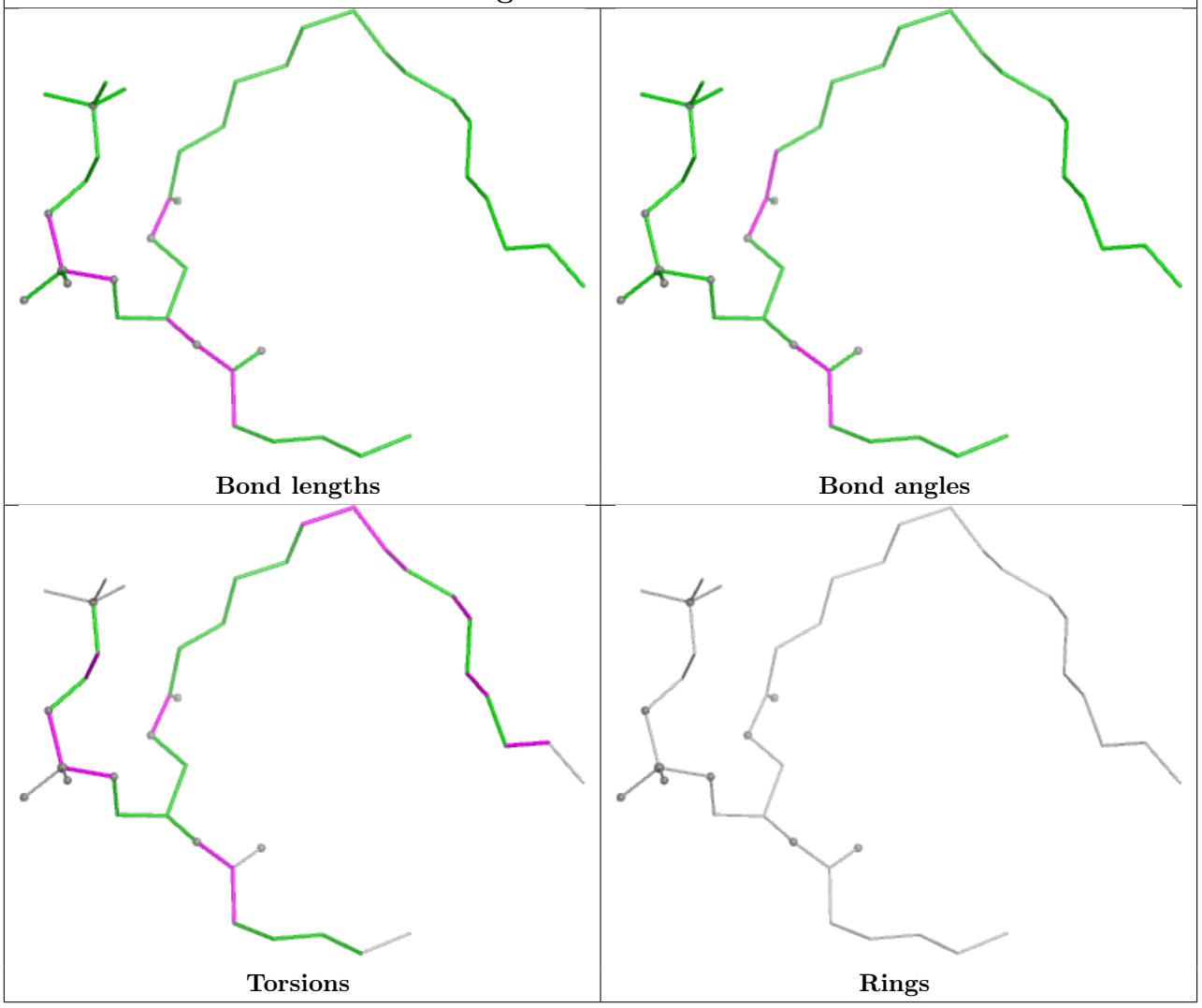


Rings

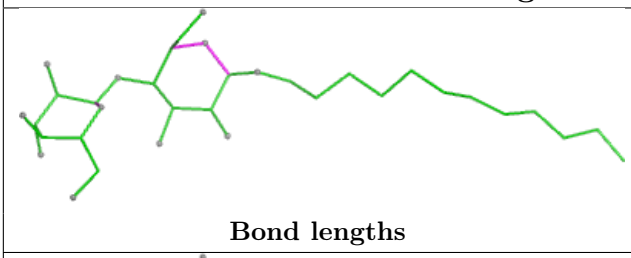
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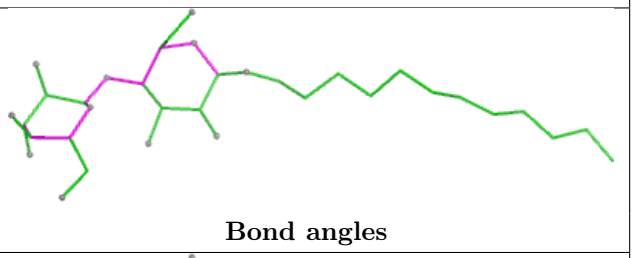
Ligand PC1 d 202



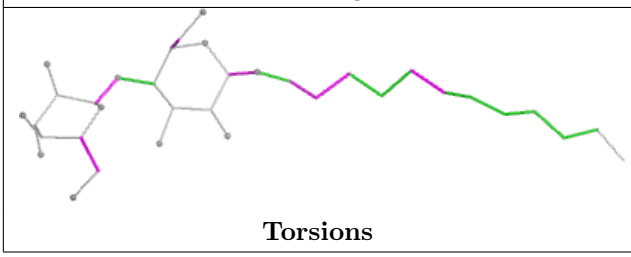
Ligand LMT M 606



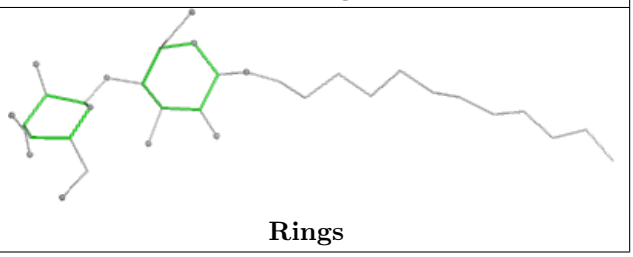
Bond lengths



Bond angles

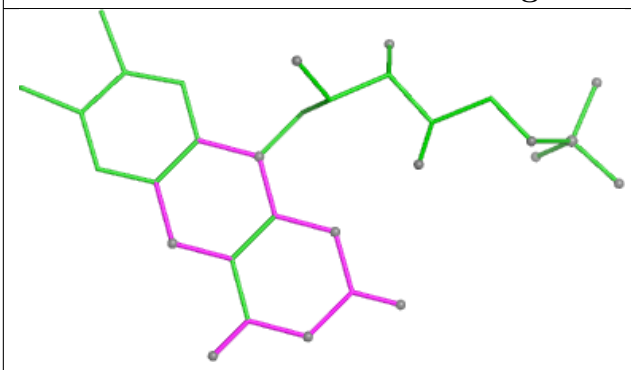


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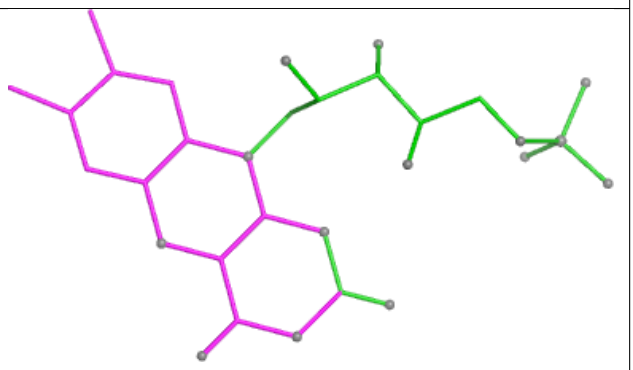


Rings

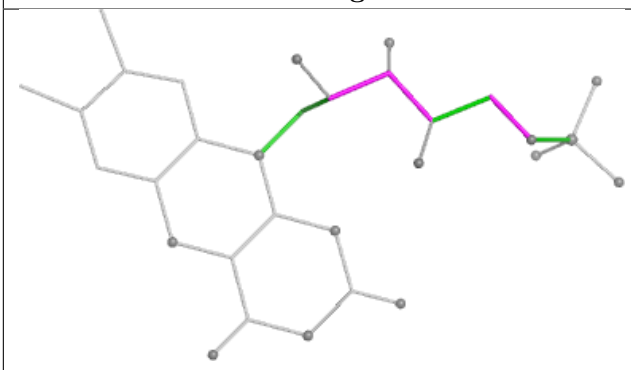
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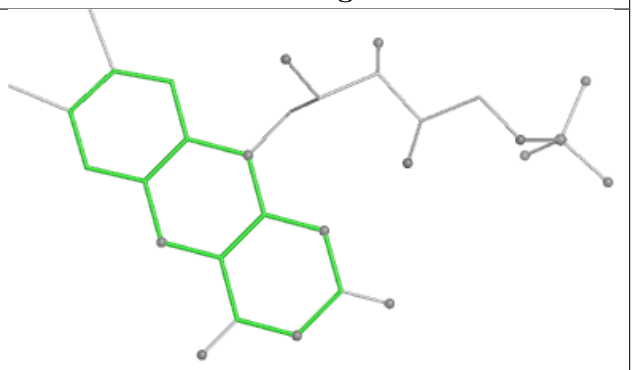
Bond lengths



Bond angles

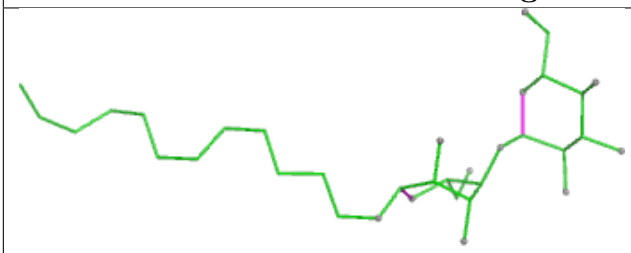


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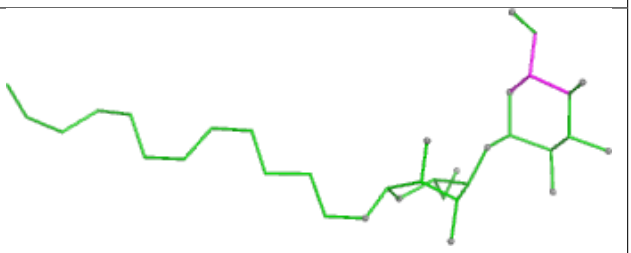


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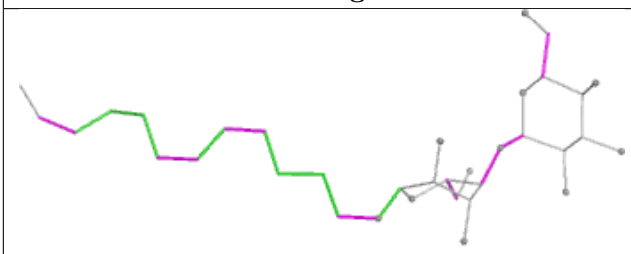
Ligand LMT H 602



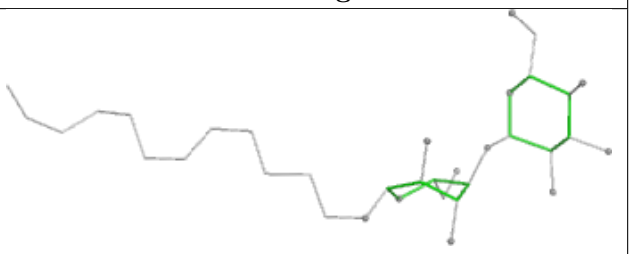
Bond lengths



Bond angles

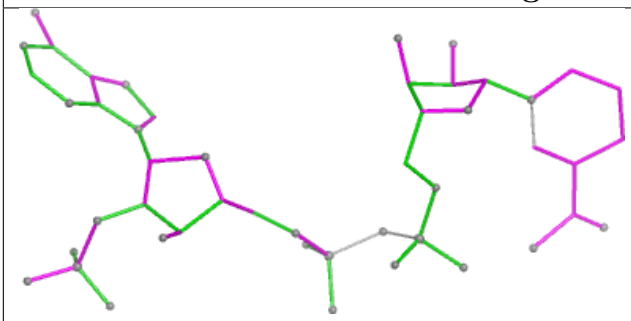


Torsions

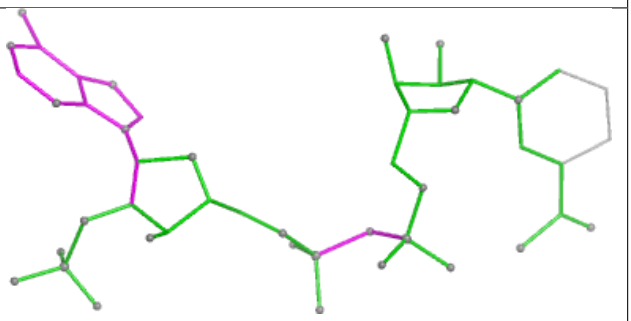


Rings

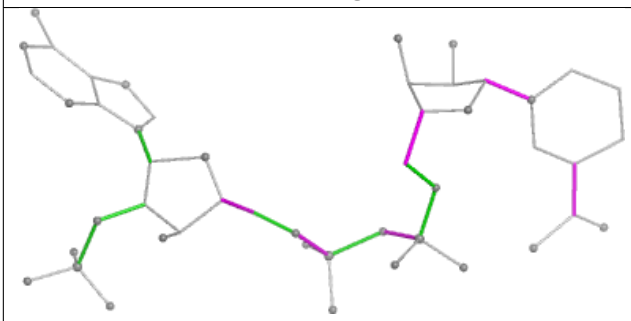
Ligand NDP P 501



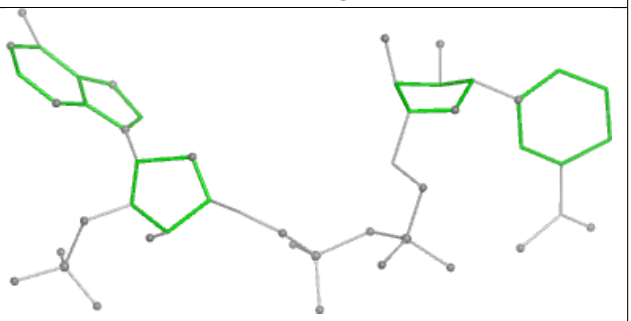
Bond lengths



Bond angles



Torsions



Rings

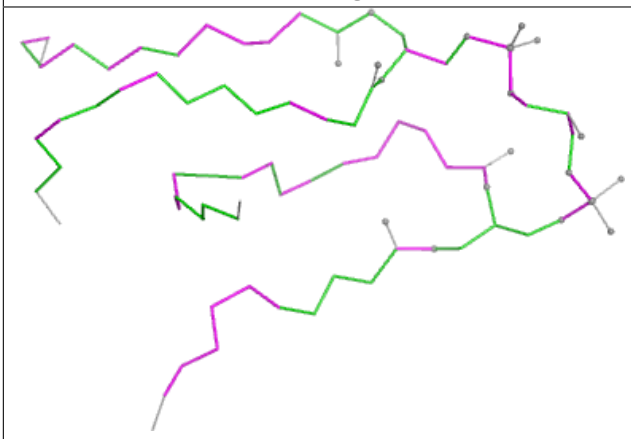
Ligand CDL N 401



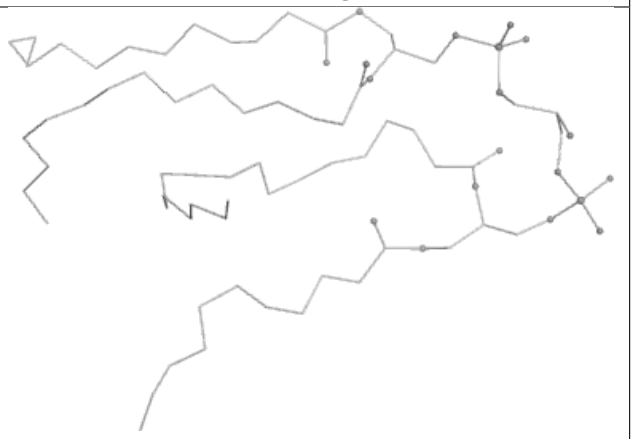
Bond lengths



Bond angles

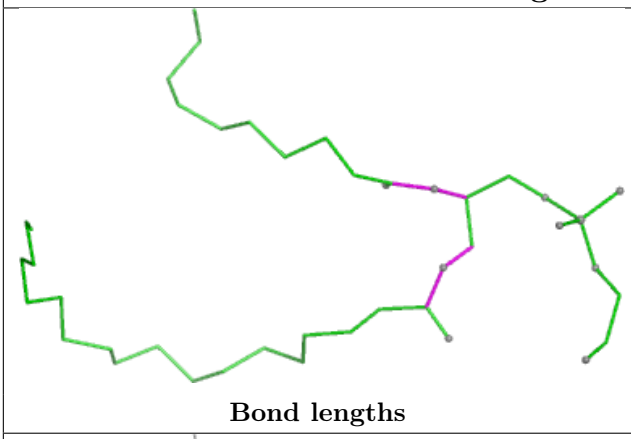


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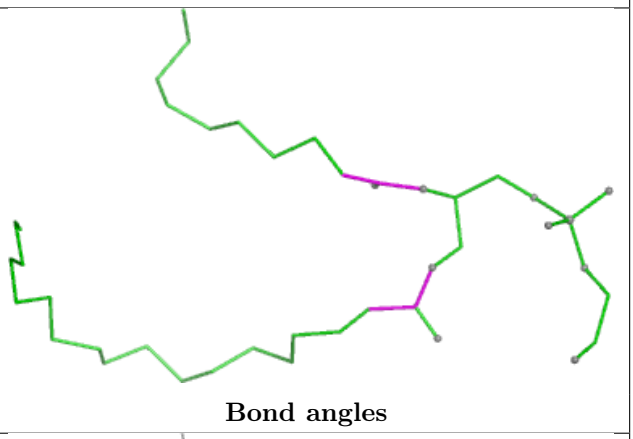


Rings

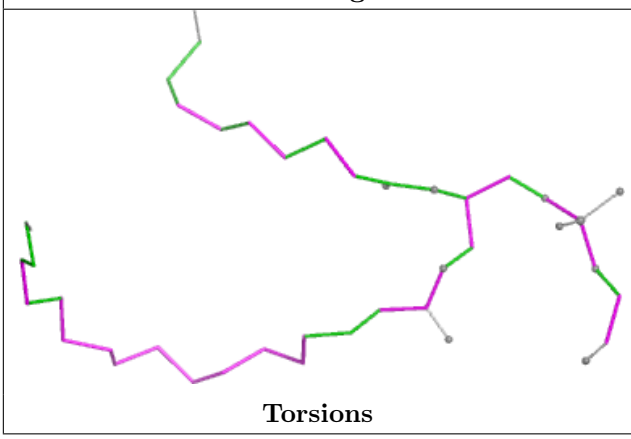
Ligand 3PE Z 202



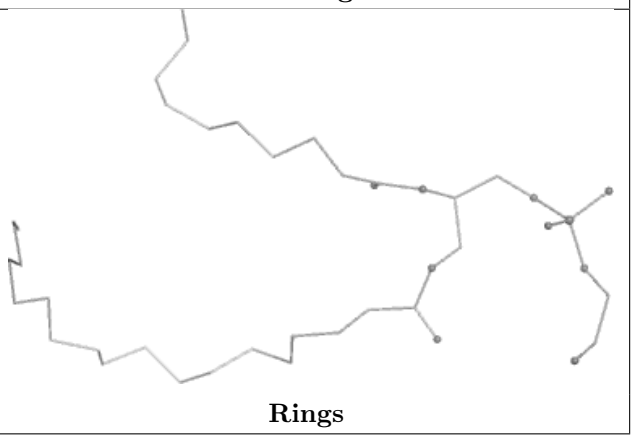
Bond lengths



Bond angles

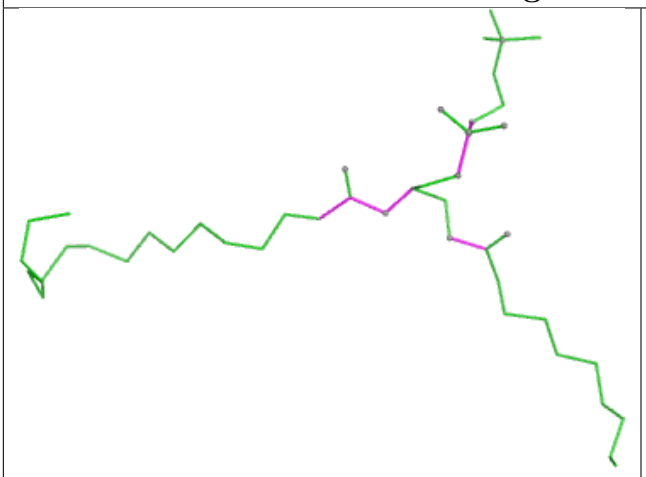


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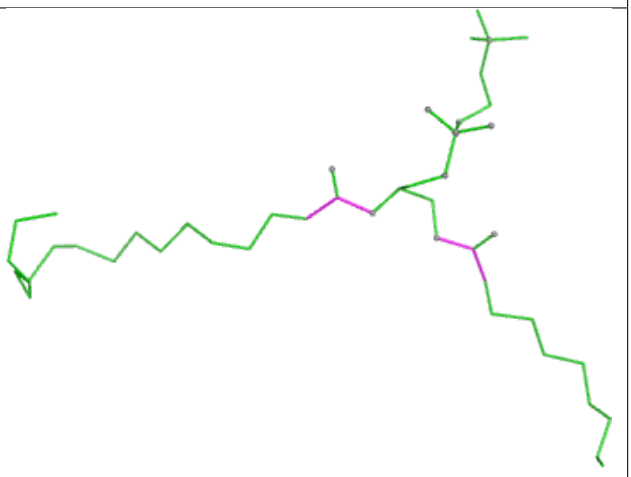


Rings

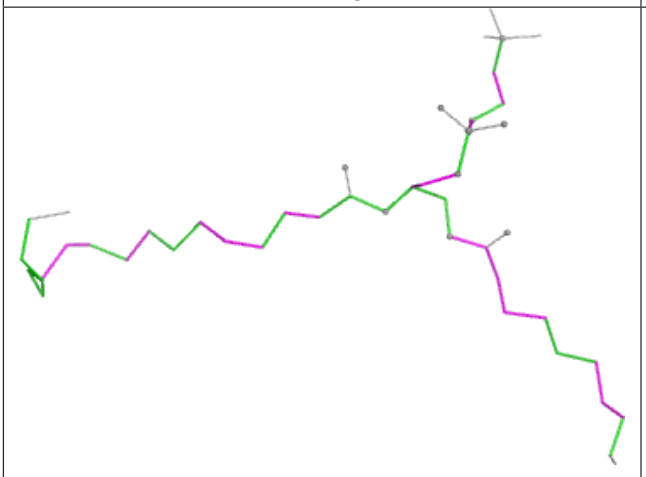
Ligand PC1 M 603



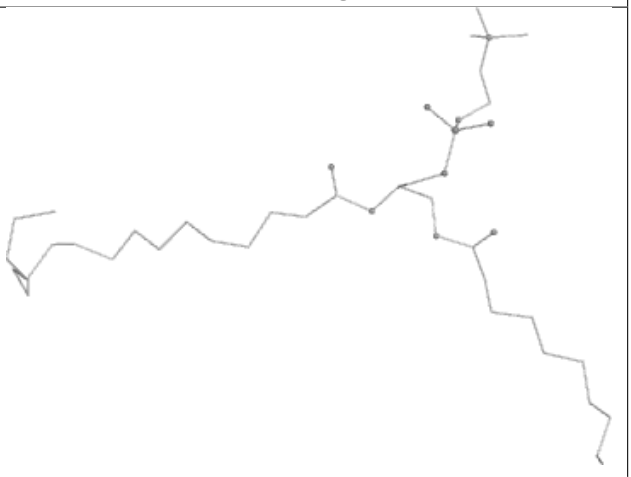
Bond lengths



Bond angles

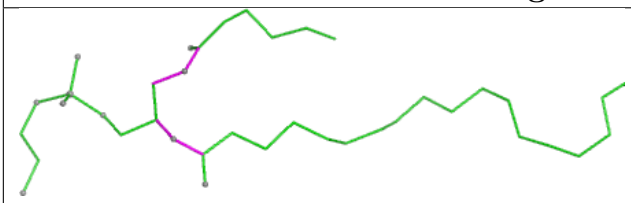


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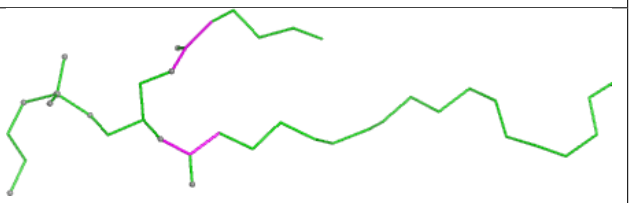


Rings

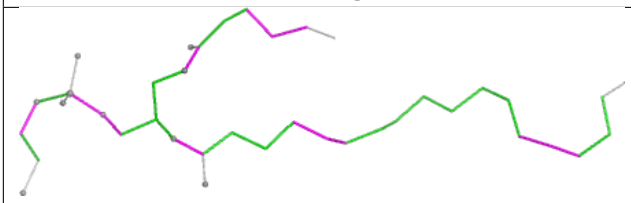
Ligand 3PE Y 201



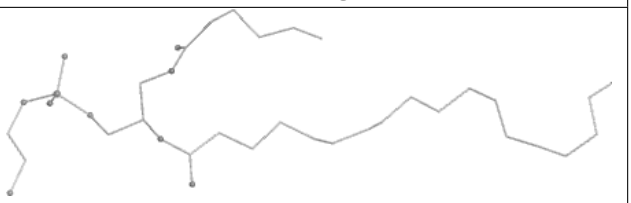
Bond lengths



Bond angles

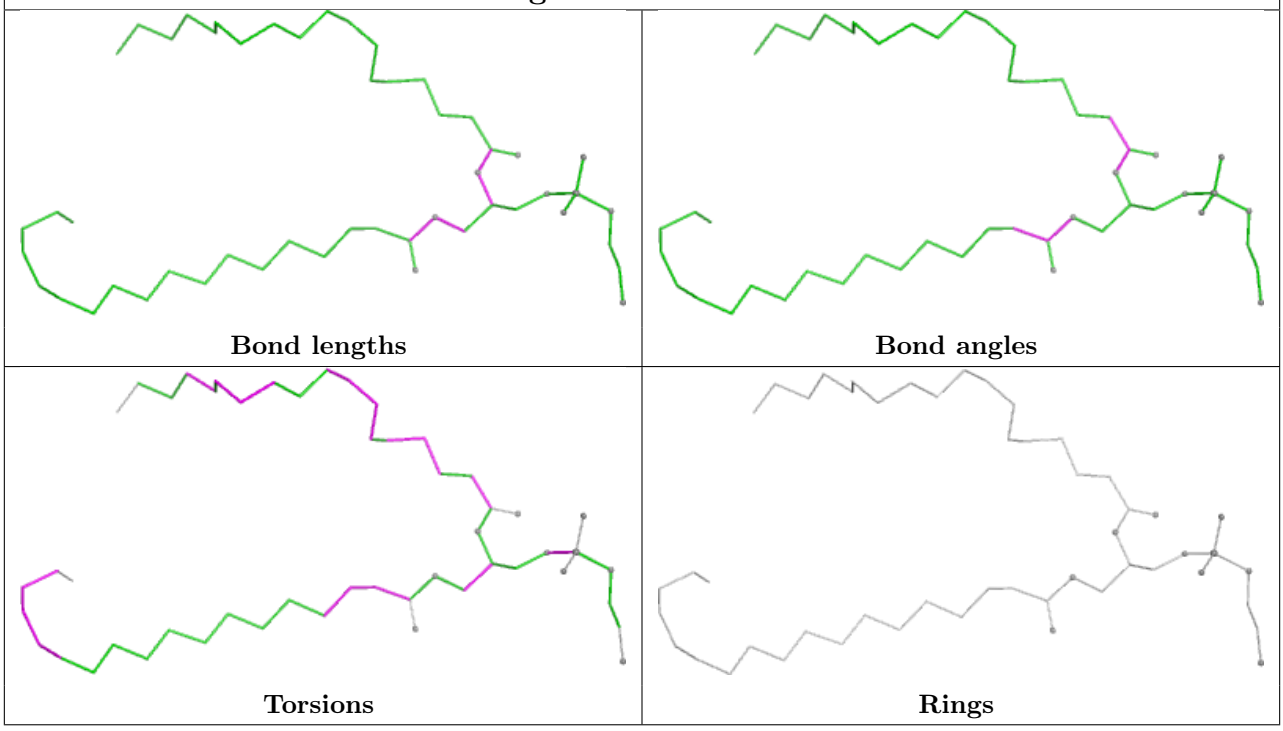


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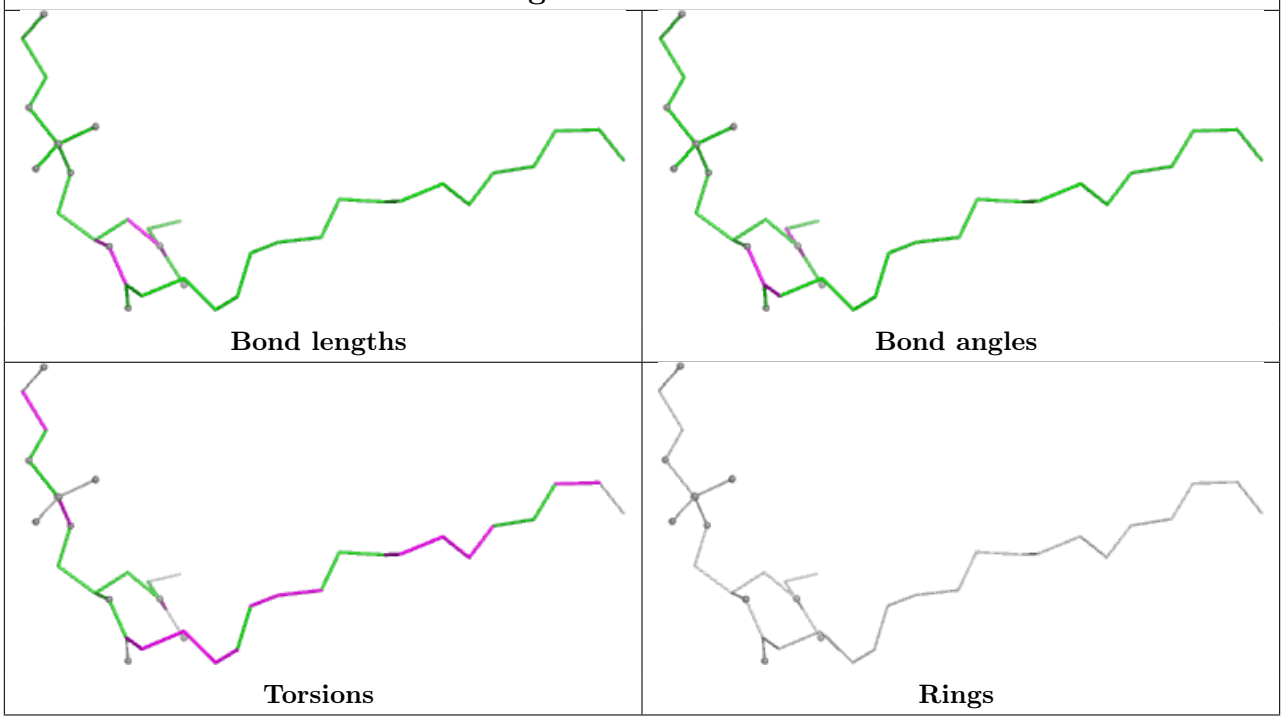


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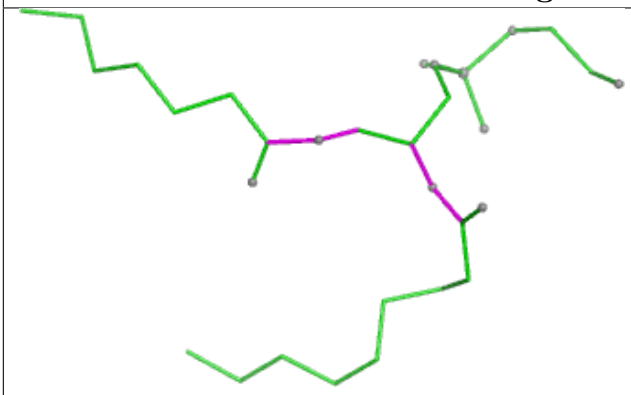
Ligand 3PE A 203



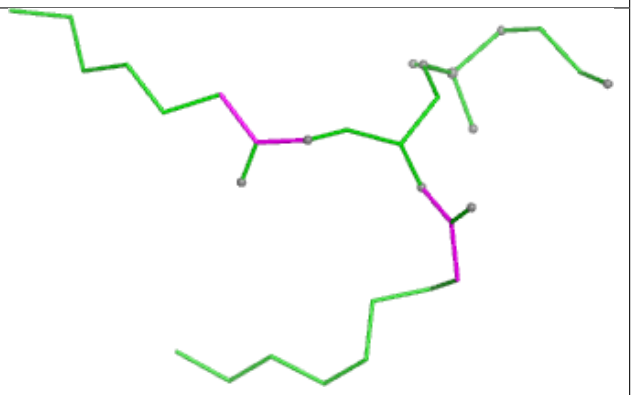
Ligand 3PE H 601



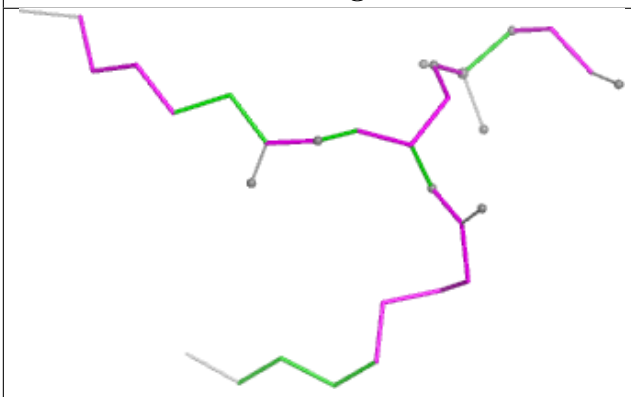
Ligand 3PE f 101



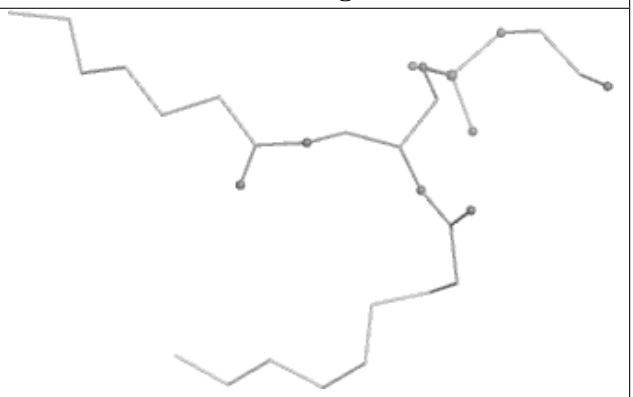
Bond lengths



Bond angles

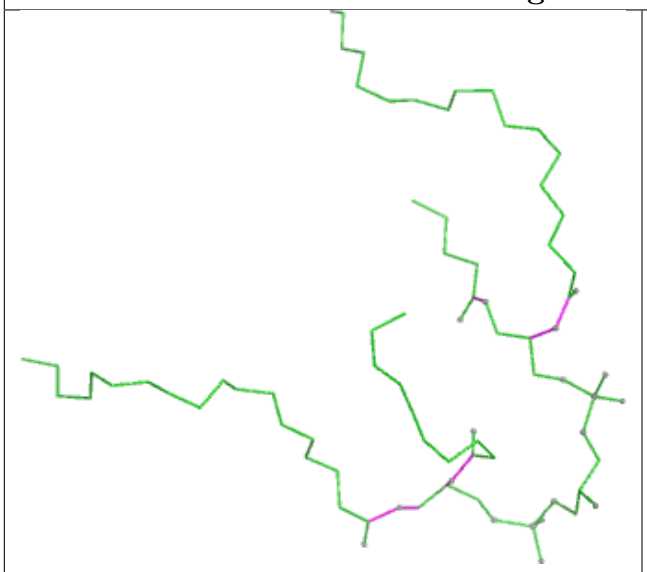


Torsions



Rings

Ligand CDL L 702



Bond lengths



Bond angles

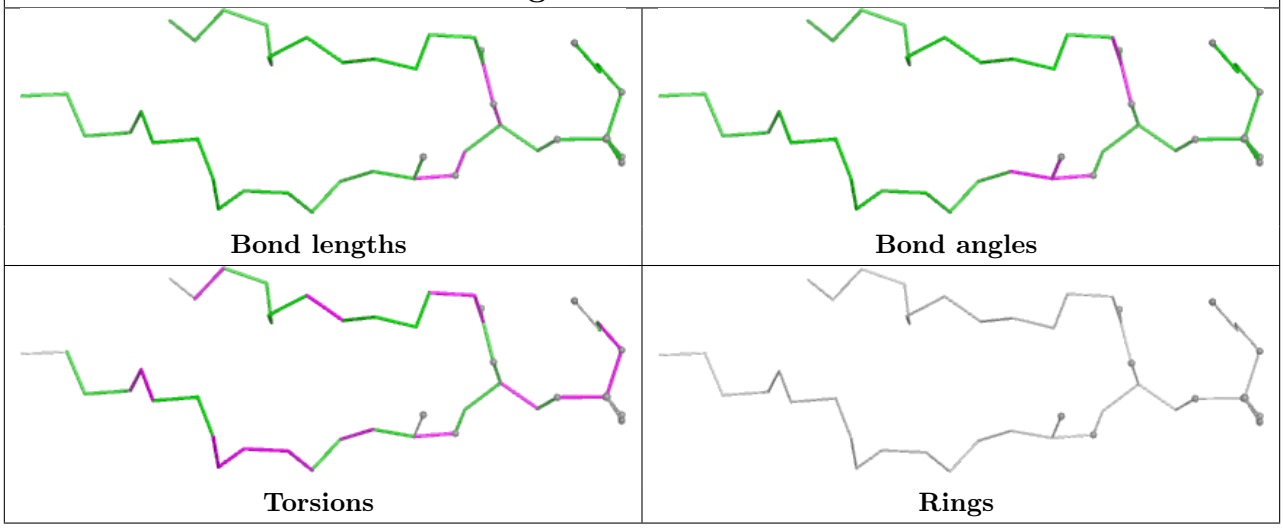


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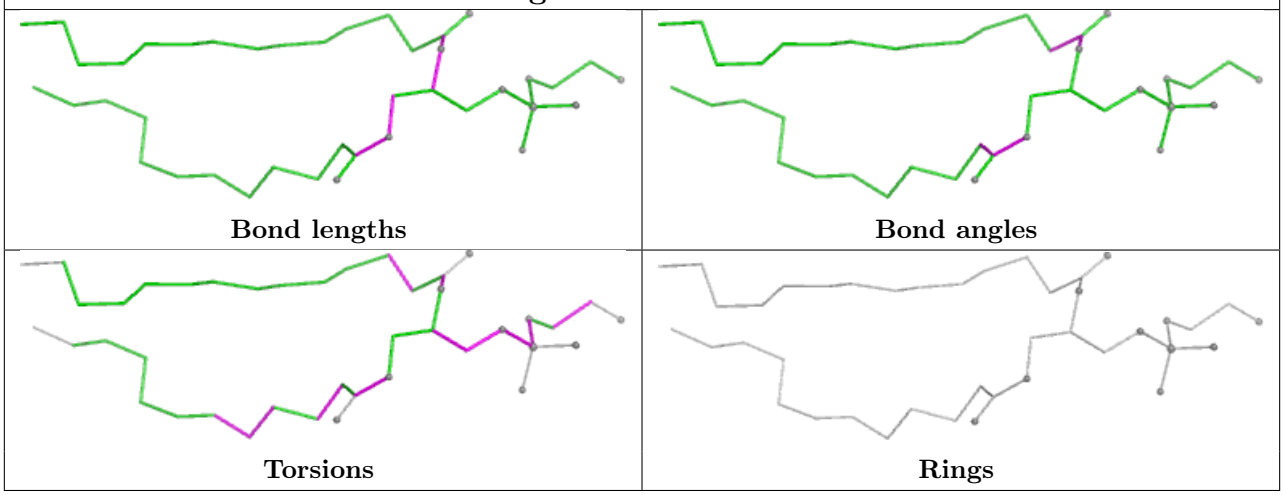


Rings

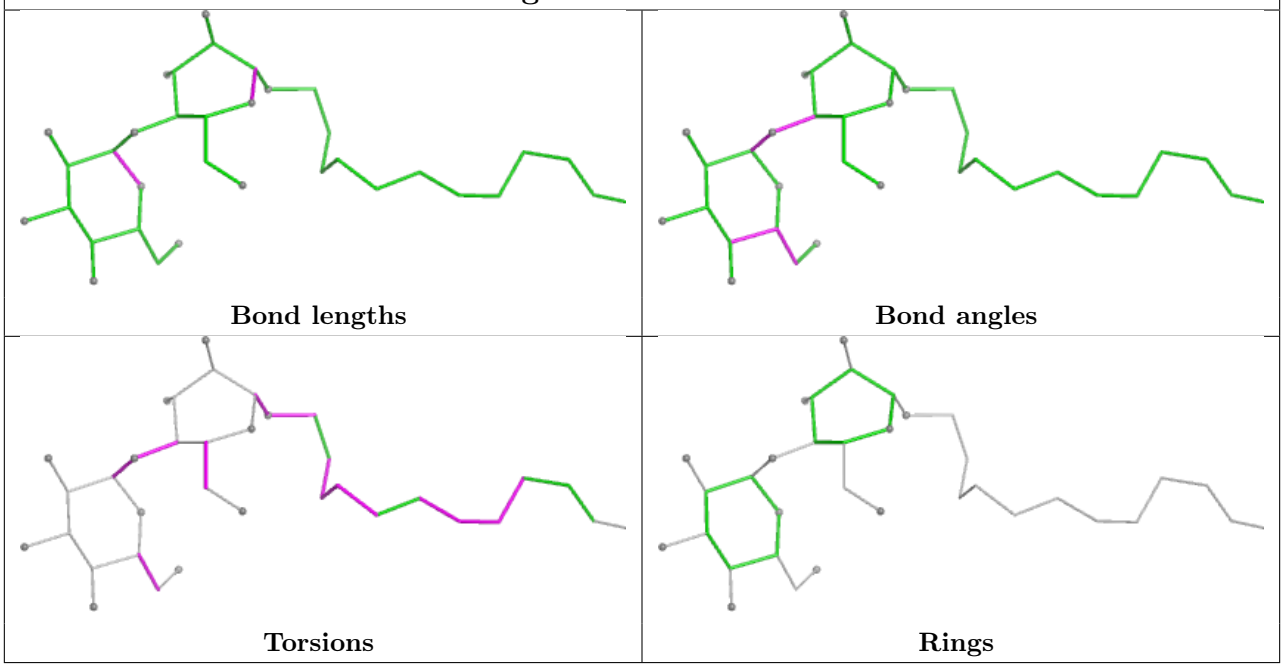
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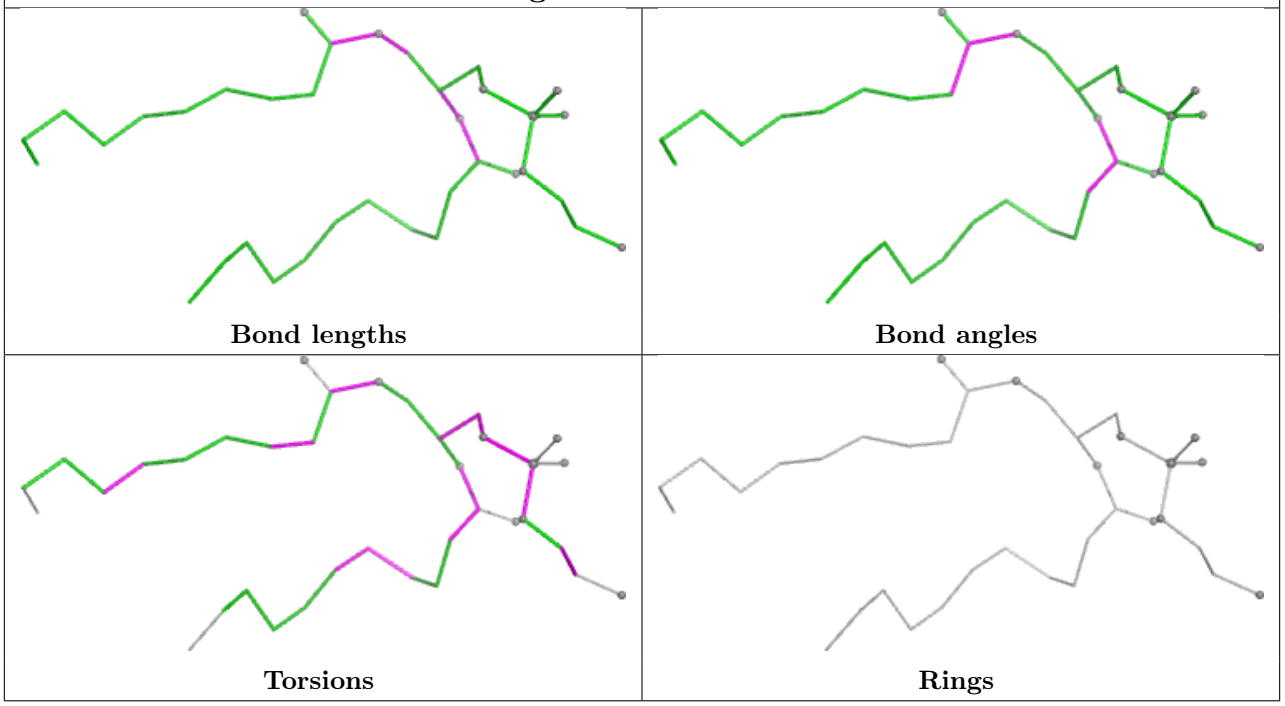
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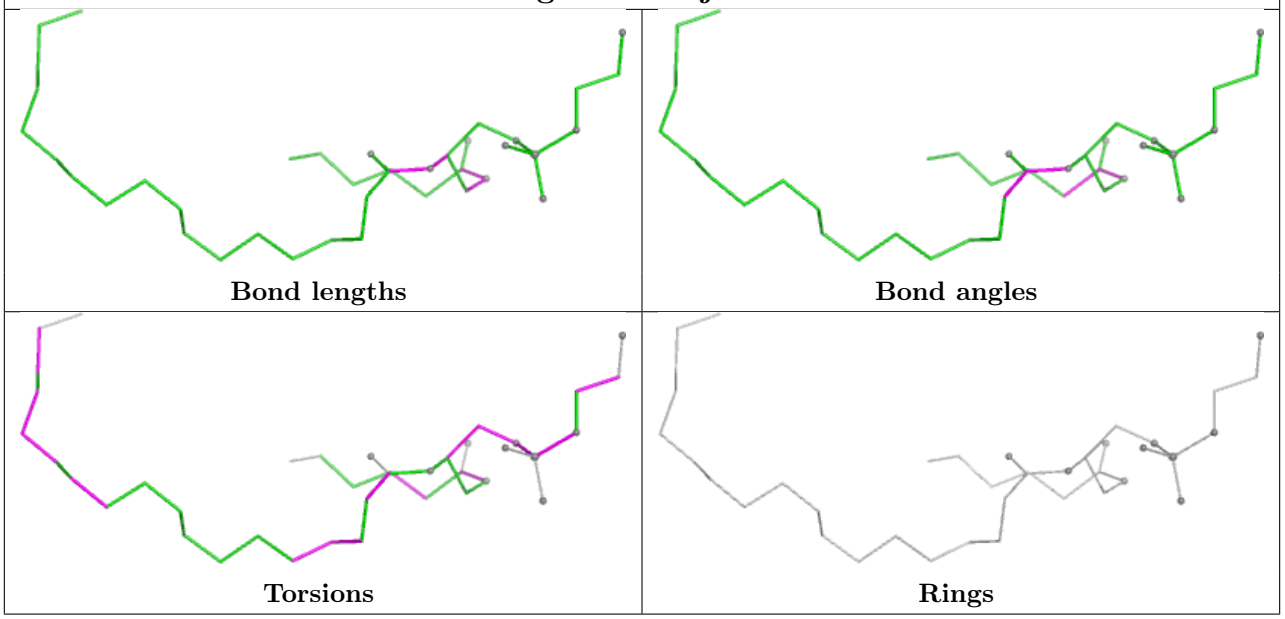
Ligand LMT Y 204



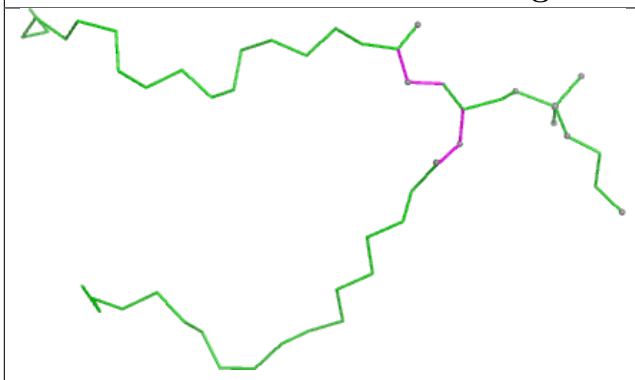
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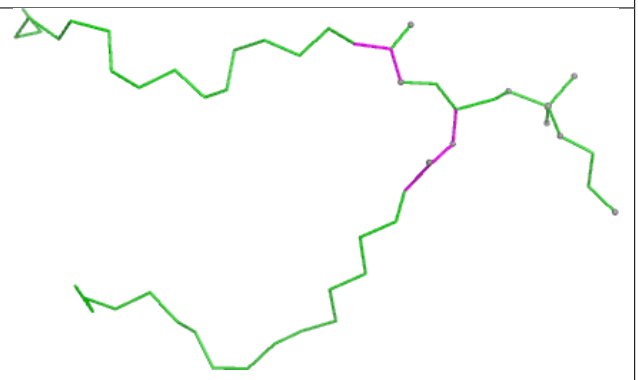
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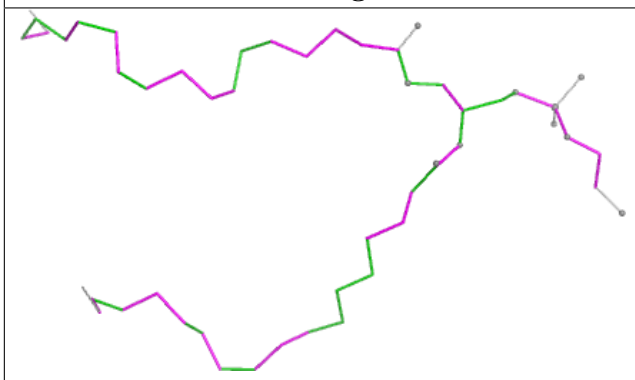
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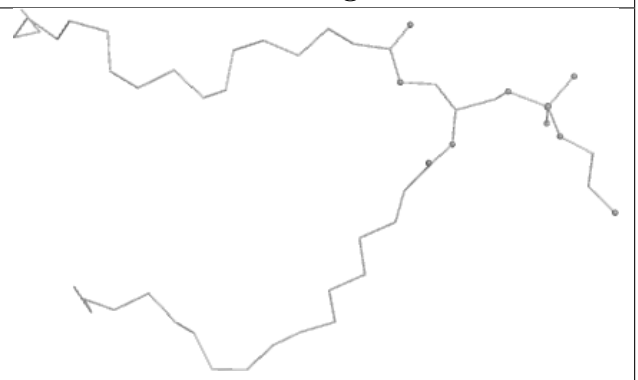
Bond lengths



Bond angles

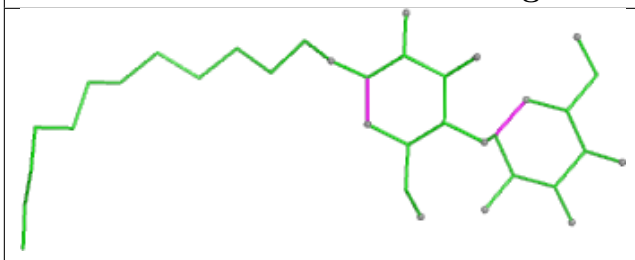


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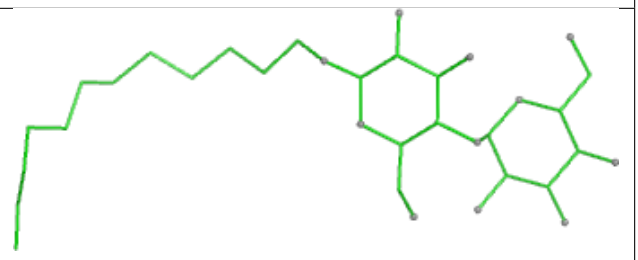


Rings

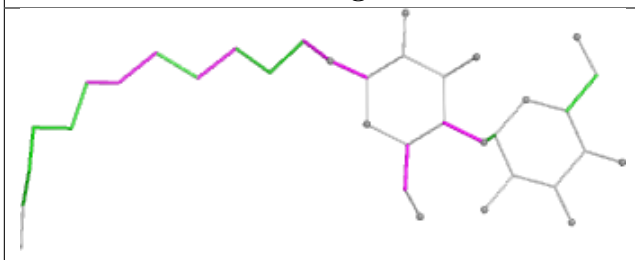
Ligand LMT B 203



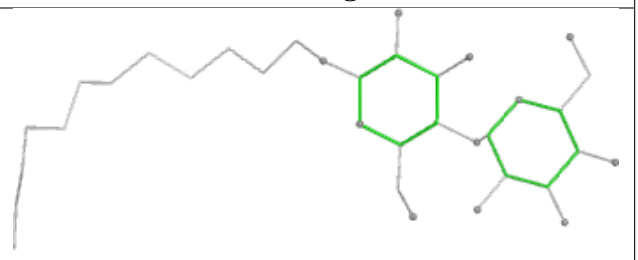
Bond lengths



Bond angles

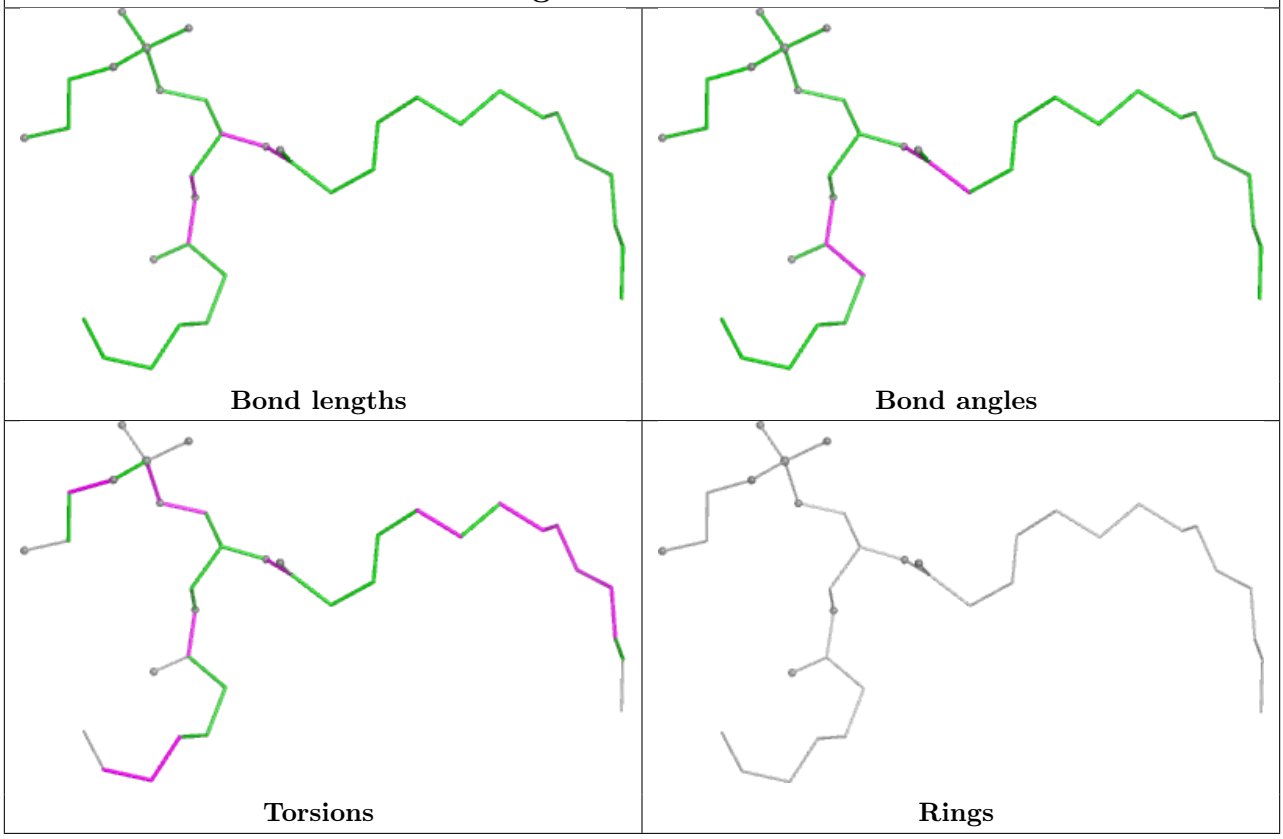


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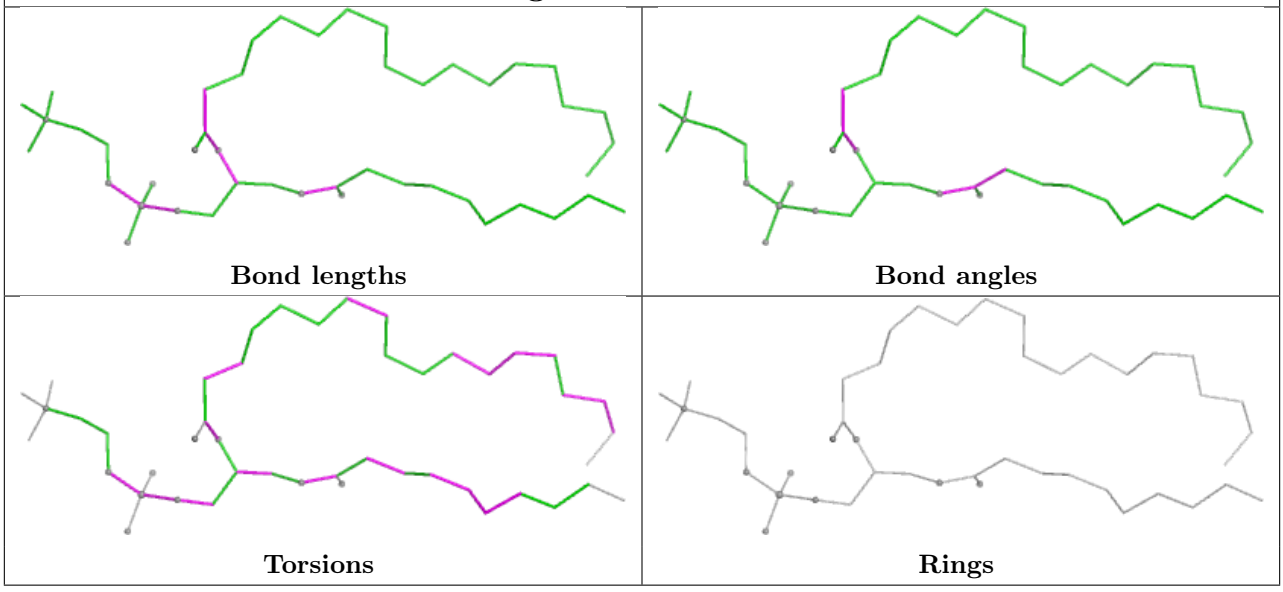


Rings

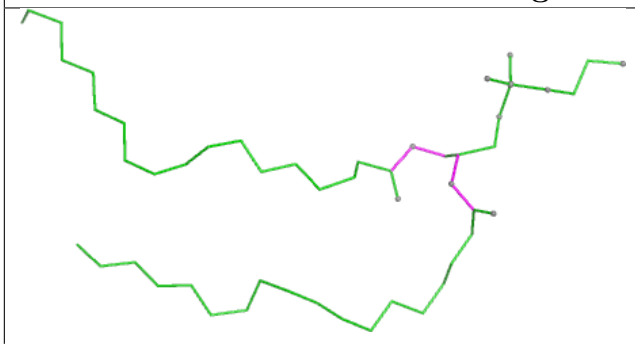
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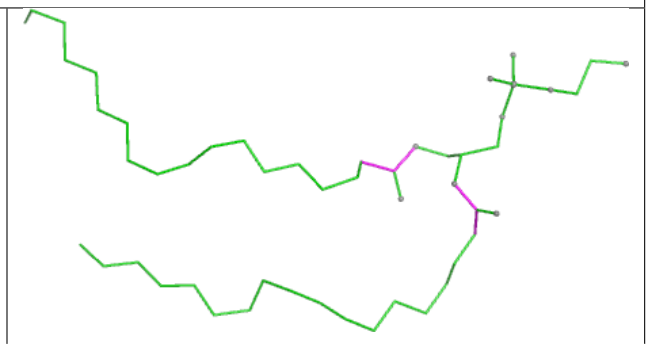
Ligand PC1 H 603



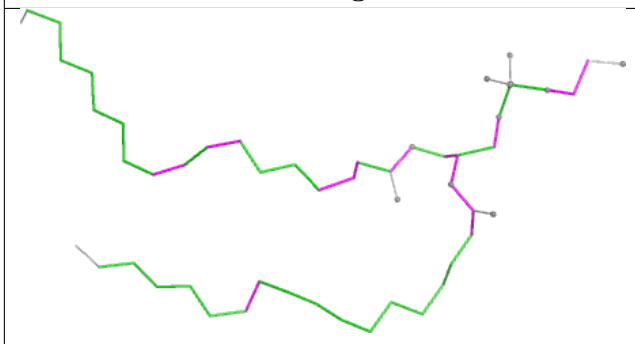
Ligand 3PE L 701



Bond lengths



Bond angles

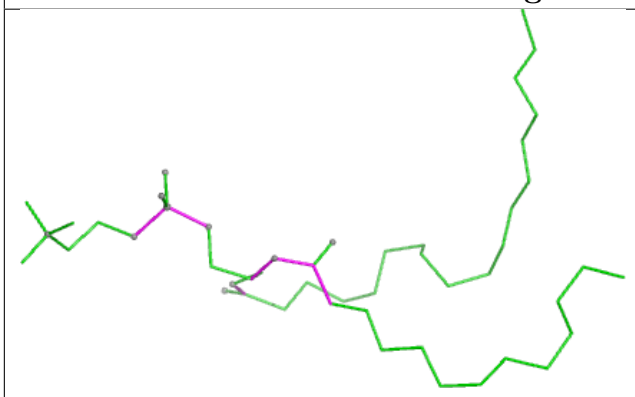


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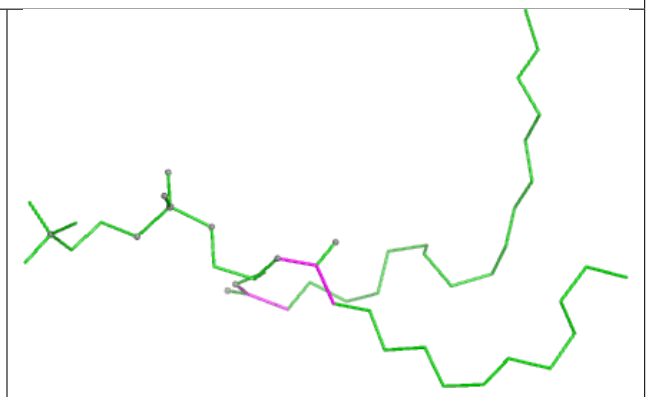


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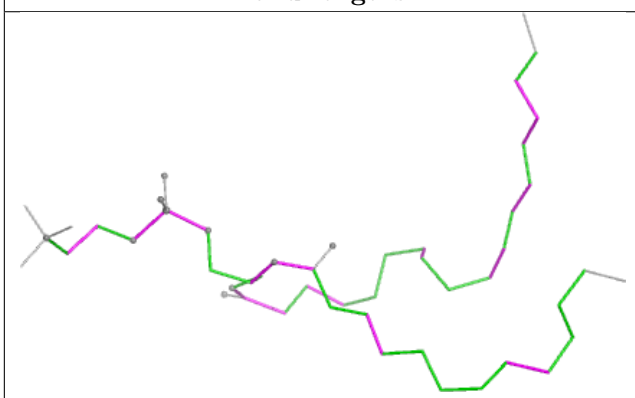
Ligand PC1 M 604



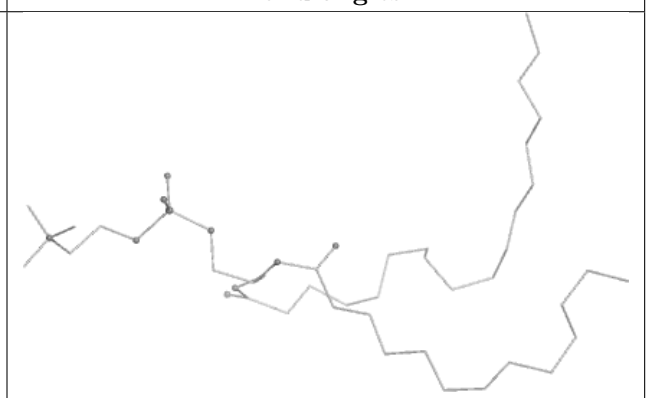
Bond lengths



Bond angles



Torsions

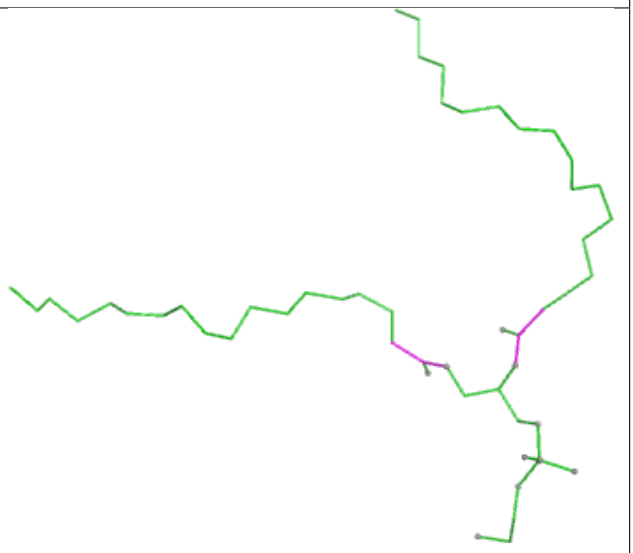


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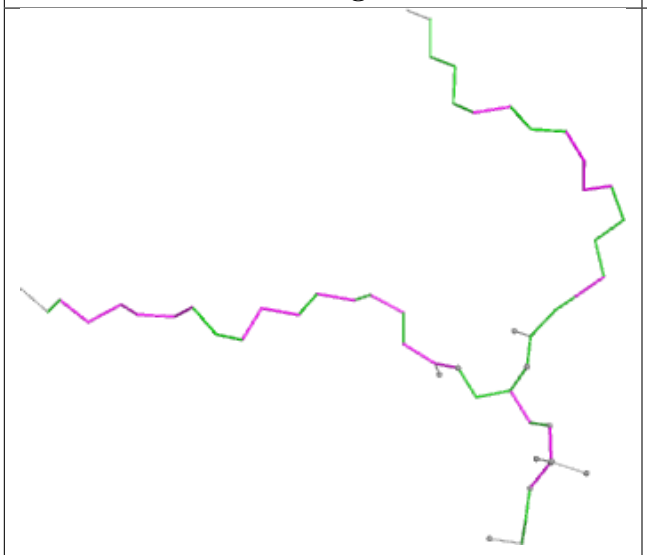
Ligand 3PE I 201



Bond lengths



Bond angles

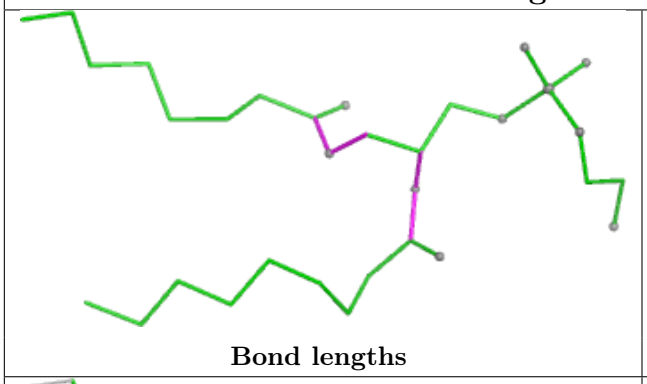


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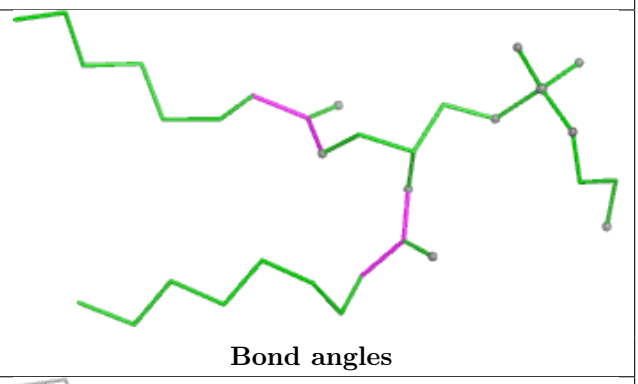


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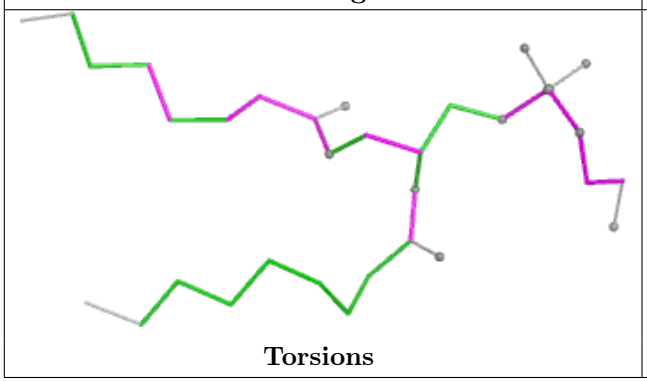
Ligand 3PE Y 203



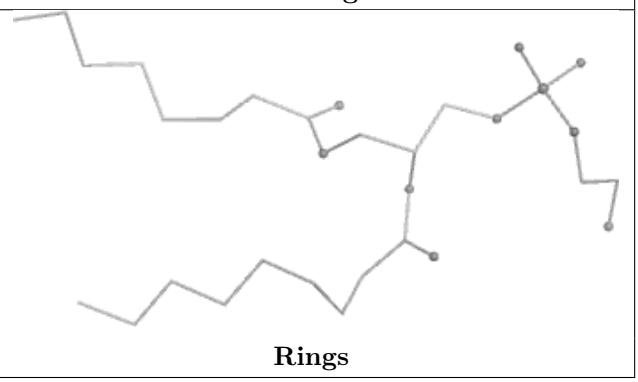
Bond lengths



Bond angles

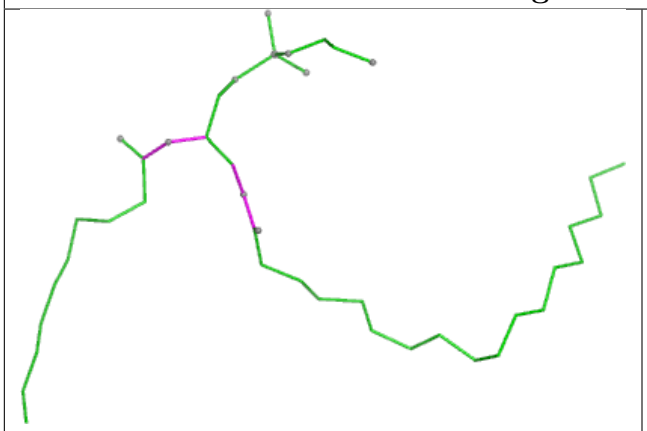


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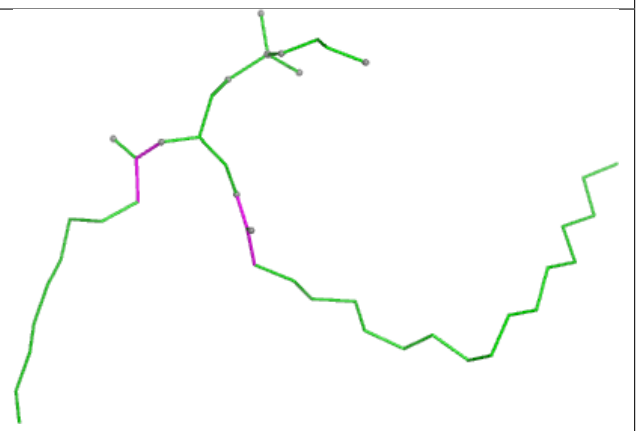


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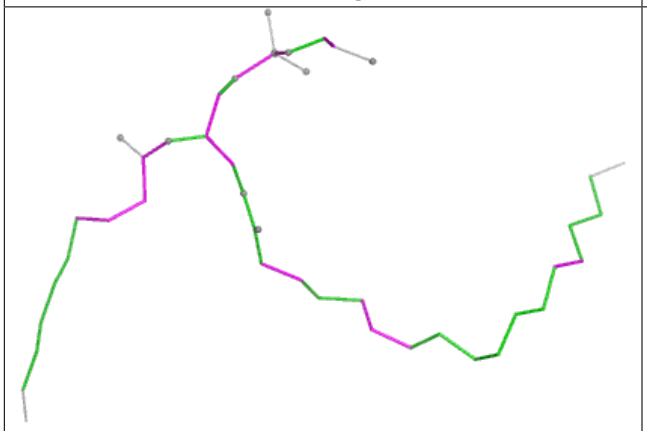
Ligand 3PE L 703



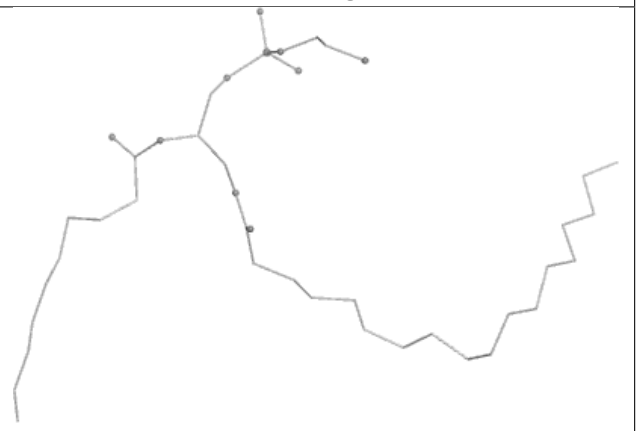
Bond lengths



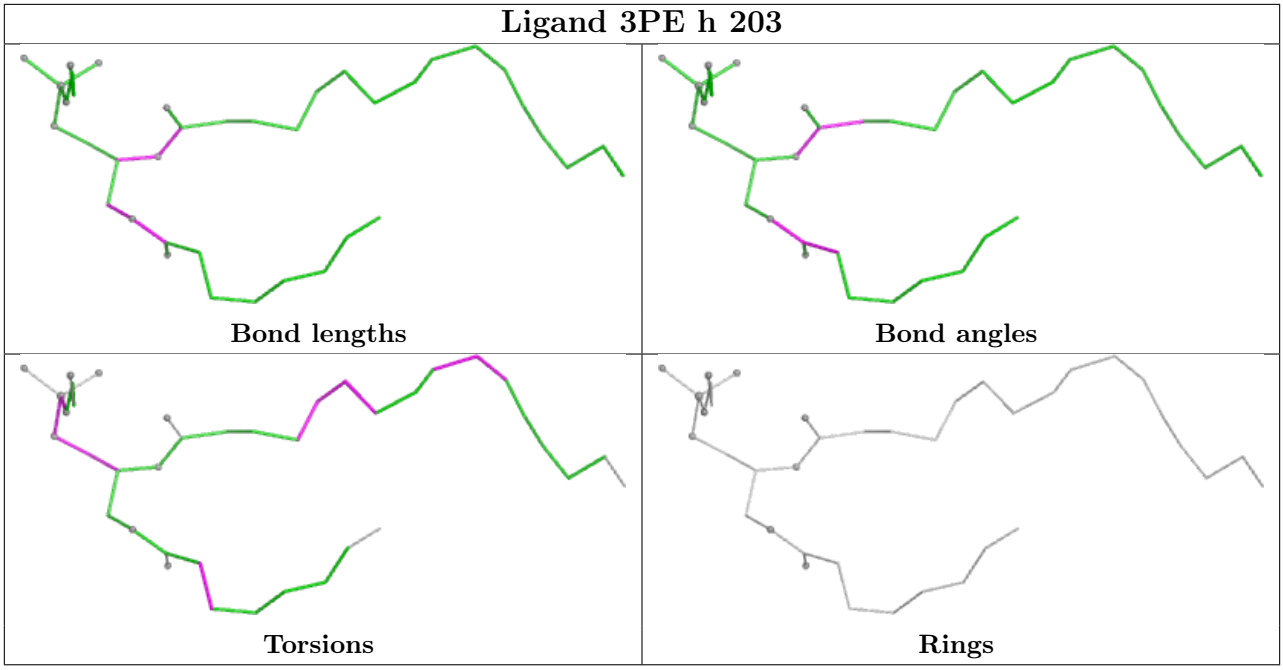
Bond angles



Torsions



Rings



5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

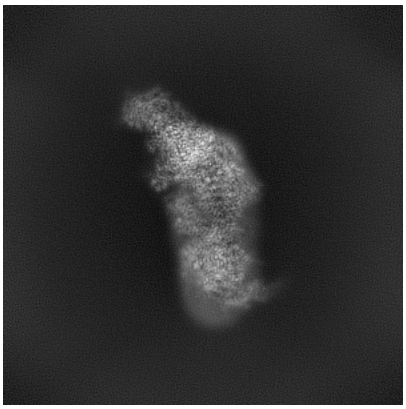
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-53491. These allow visual inspection of the internal detail of the map and identification of artifacts.

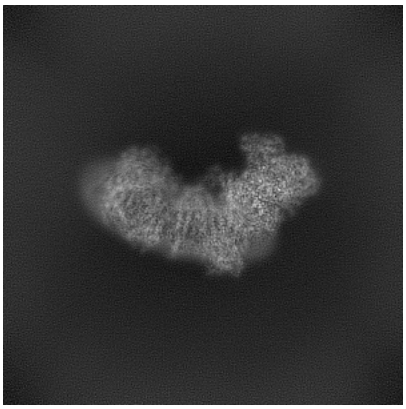
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

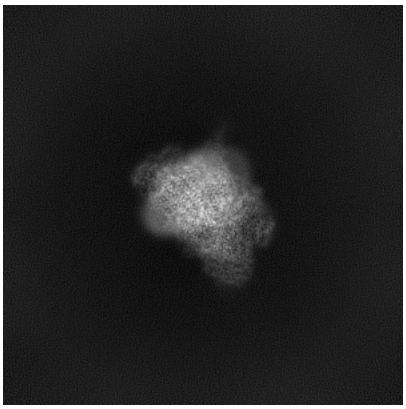
6.1.1 Primary map



X

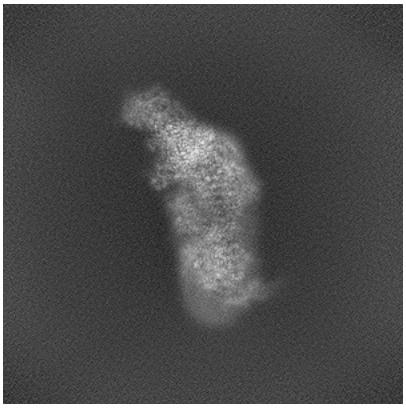


Y

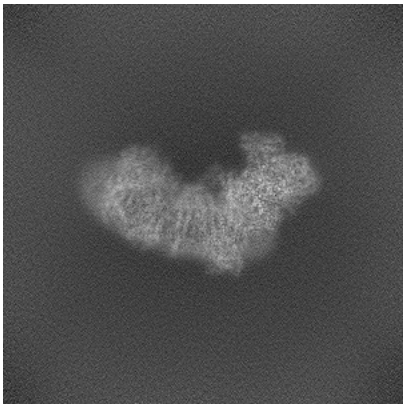


Z

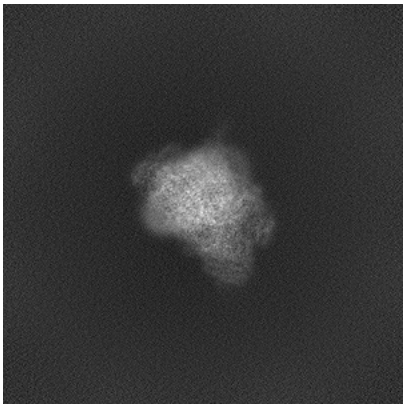
6.1.2 Raw map



X



Y

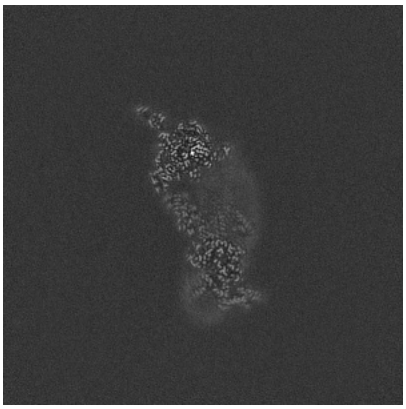


Z

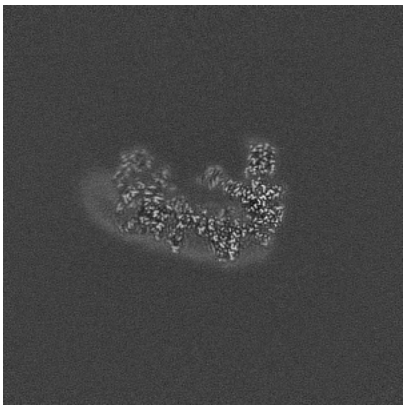
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

6.2.1 Primary map



X Index: 300

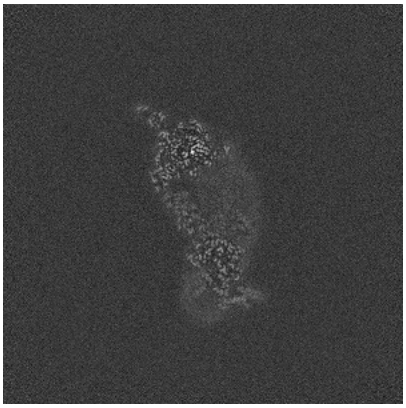


Y Index: 300

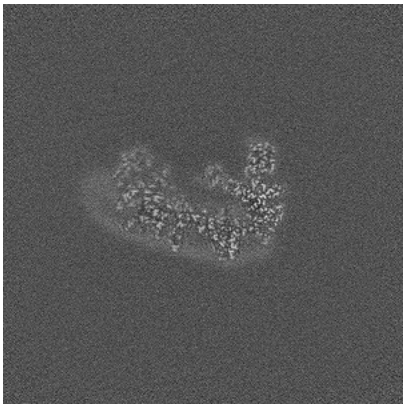


Z Index: 300

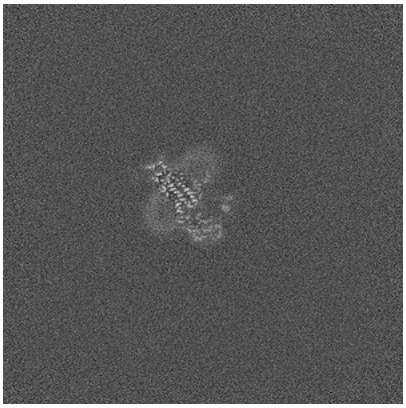
6.2.2 Raw map



X Index: 300



Y Index: 300

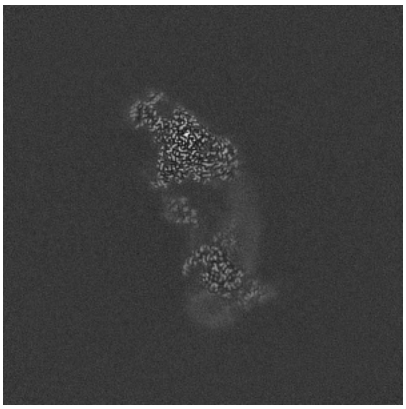


Z Index: 300

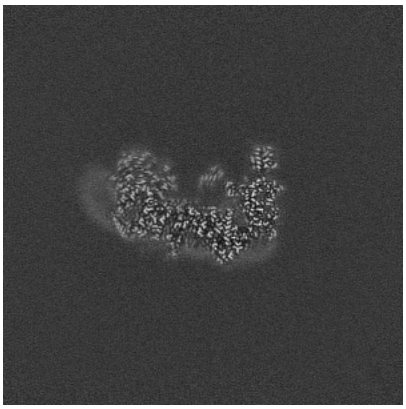
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

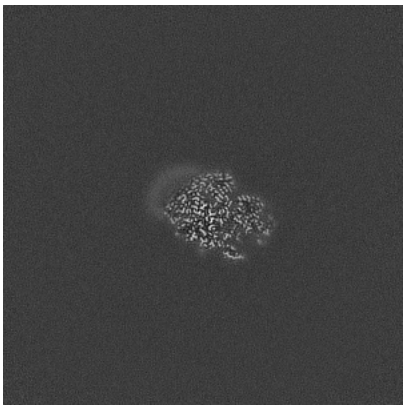
6.3.1 Primary map



X Index: 316

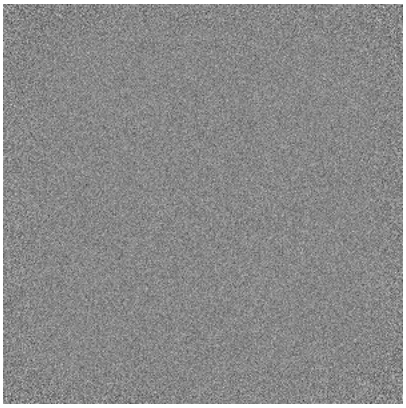


Y Index: 307

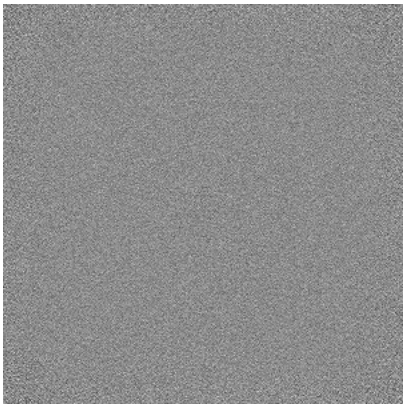


Z Index: 385

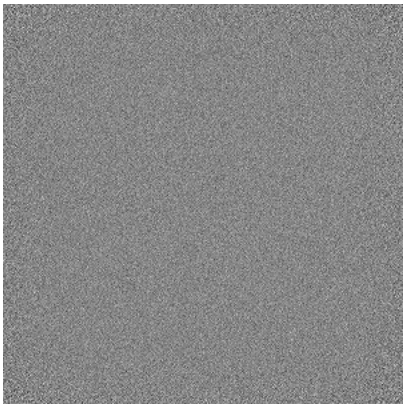
6.3.2 Raw map



X Index: 0



Y Index: 0

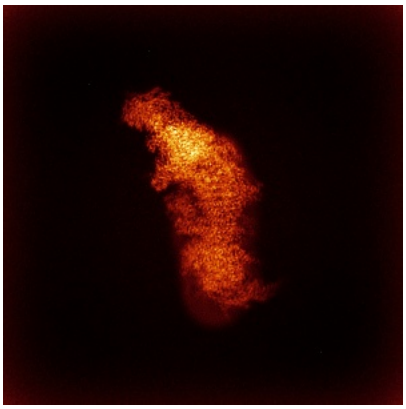


Z Index: 0

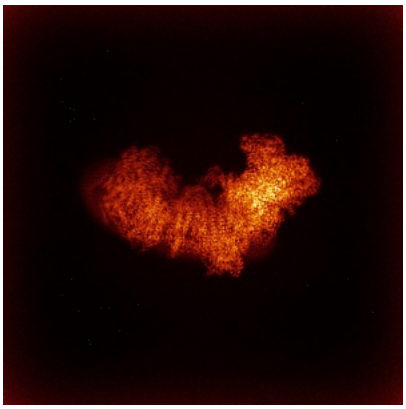
The images above show the largest variance slices of the map in three orthogonal directions.

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

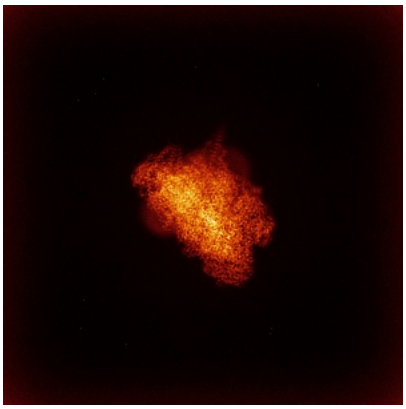
6.4.1 Primary map



X

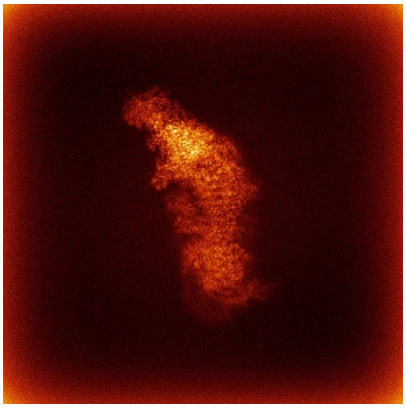


Y

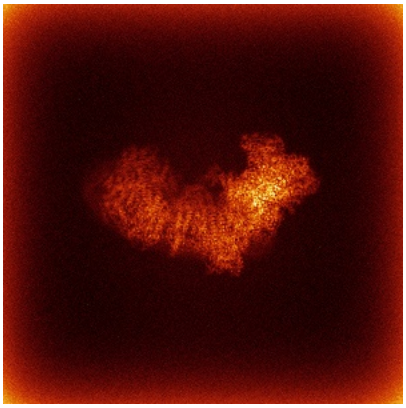


Z

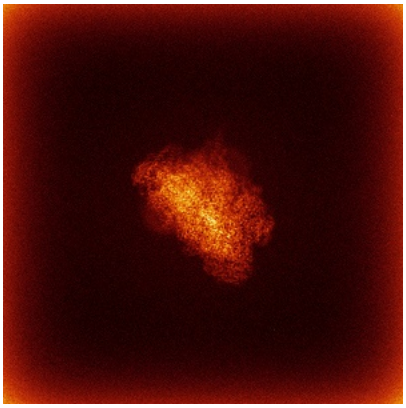
6.4.2 Raw map



X



Y

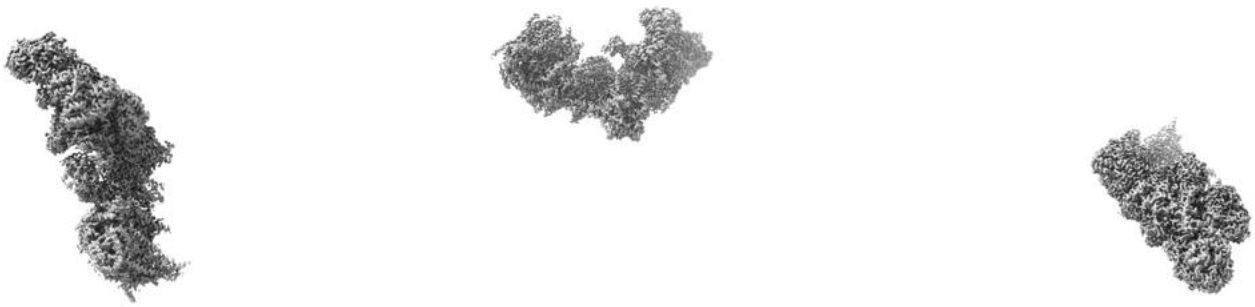


Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.25. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

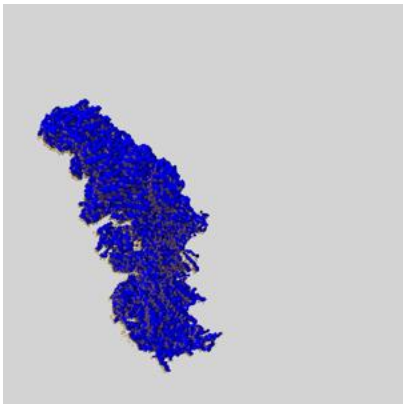
6.6 Mask visualisation (i)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

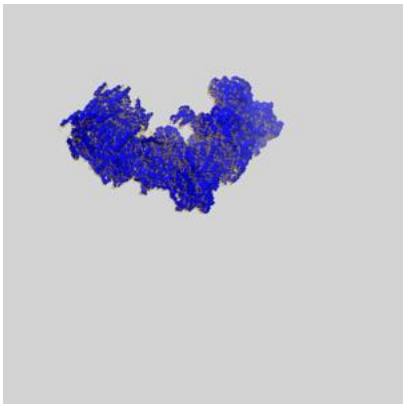
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

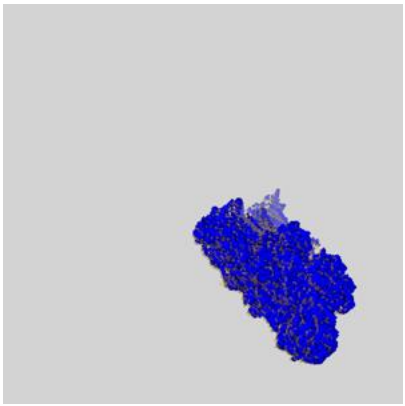
6.6.1 emd_53491_msk_1.map (i)



X



Y

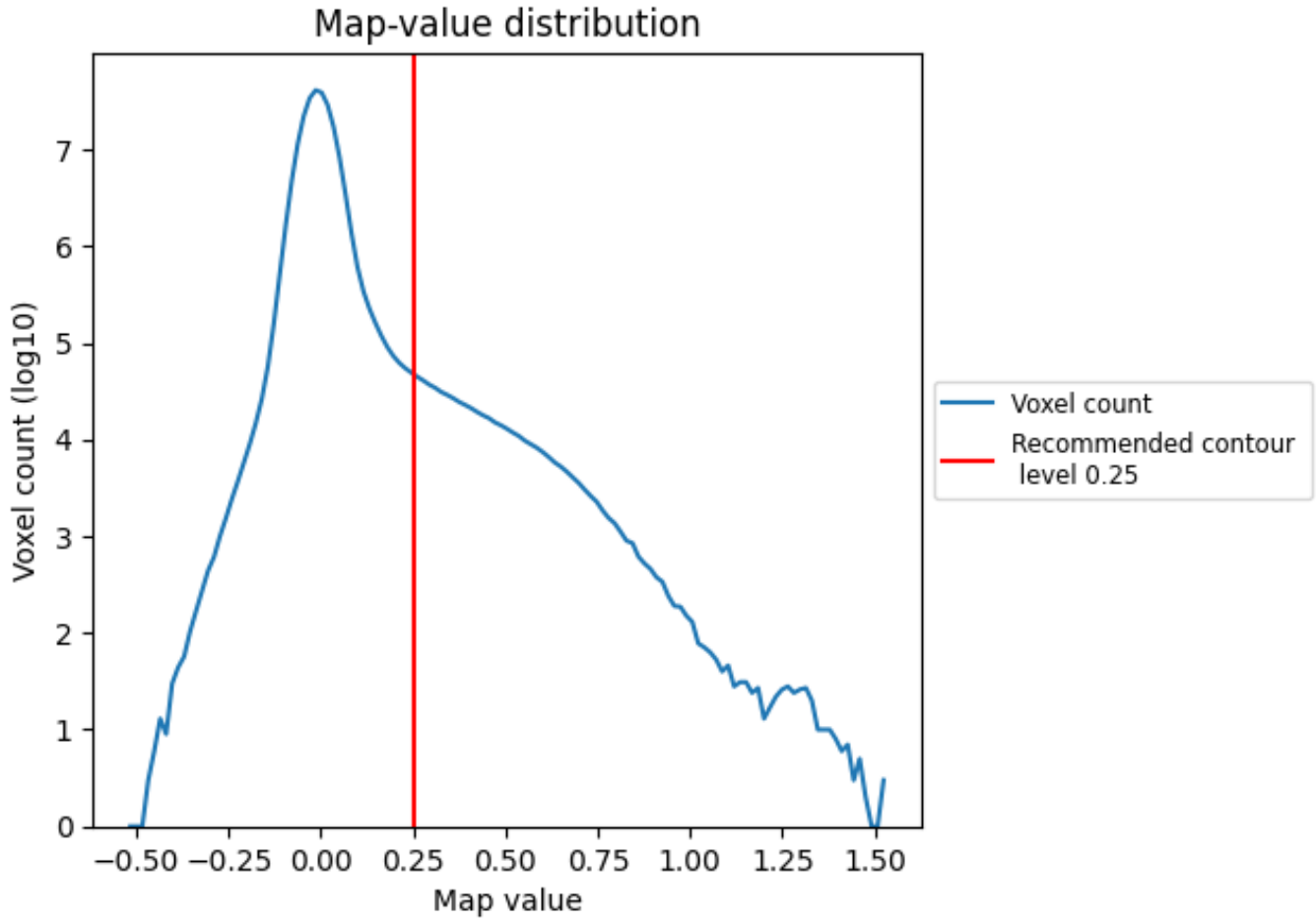


Z

7 Map analysis

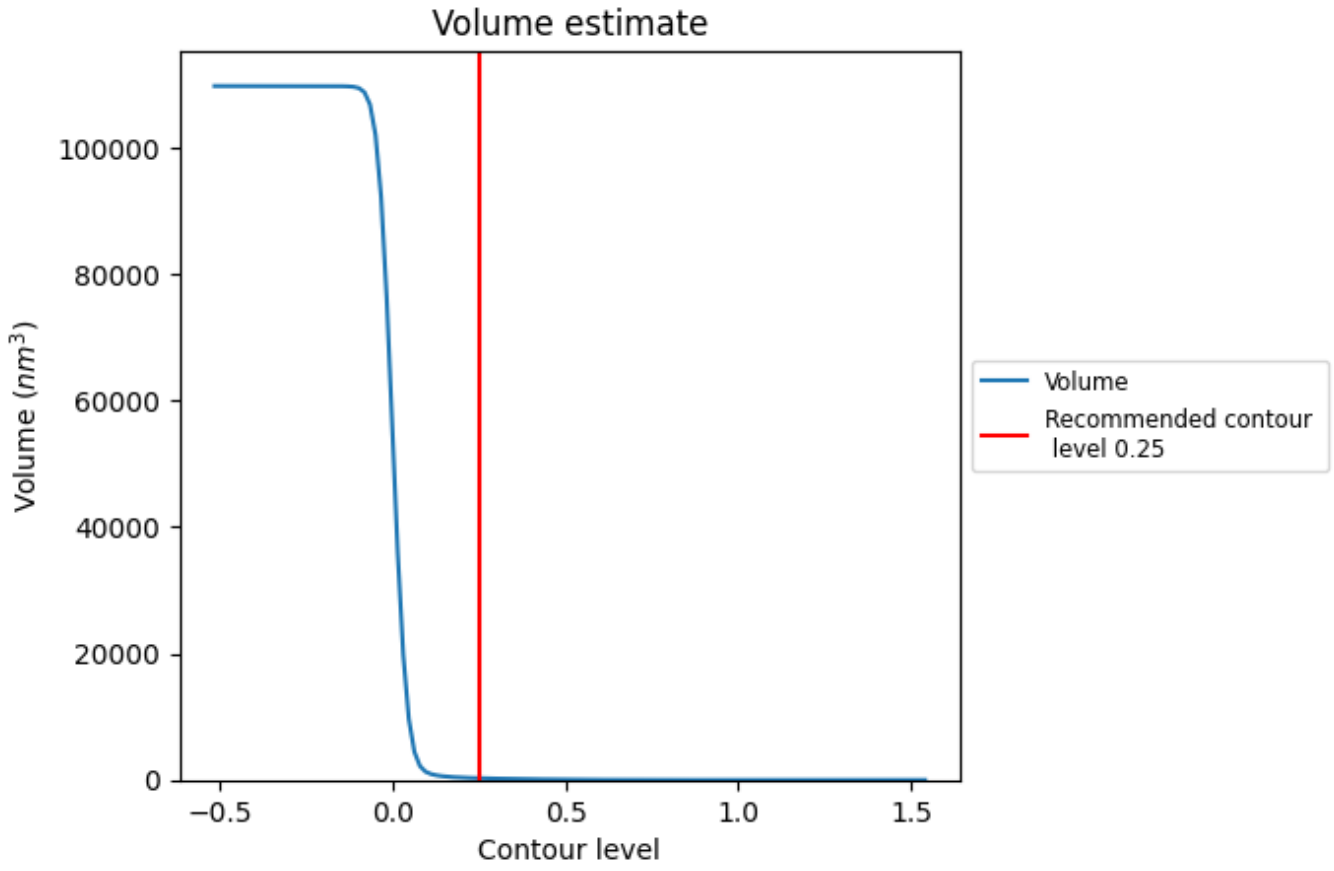
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

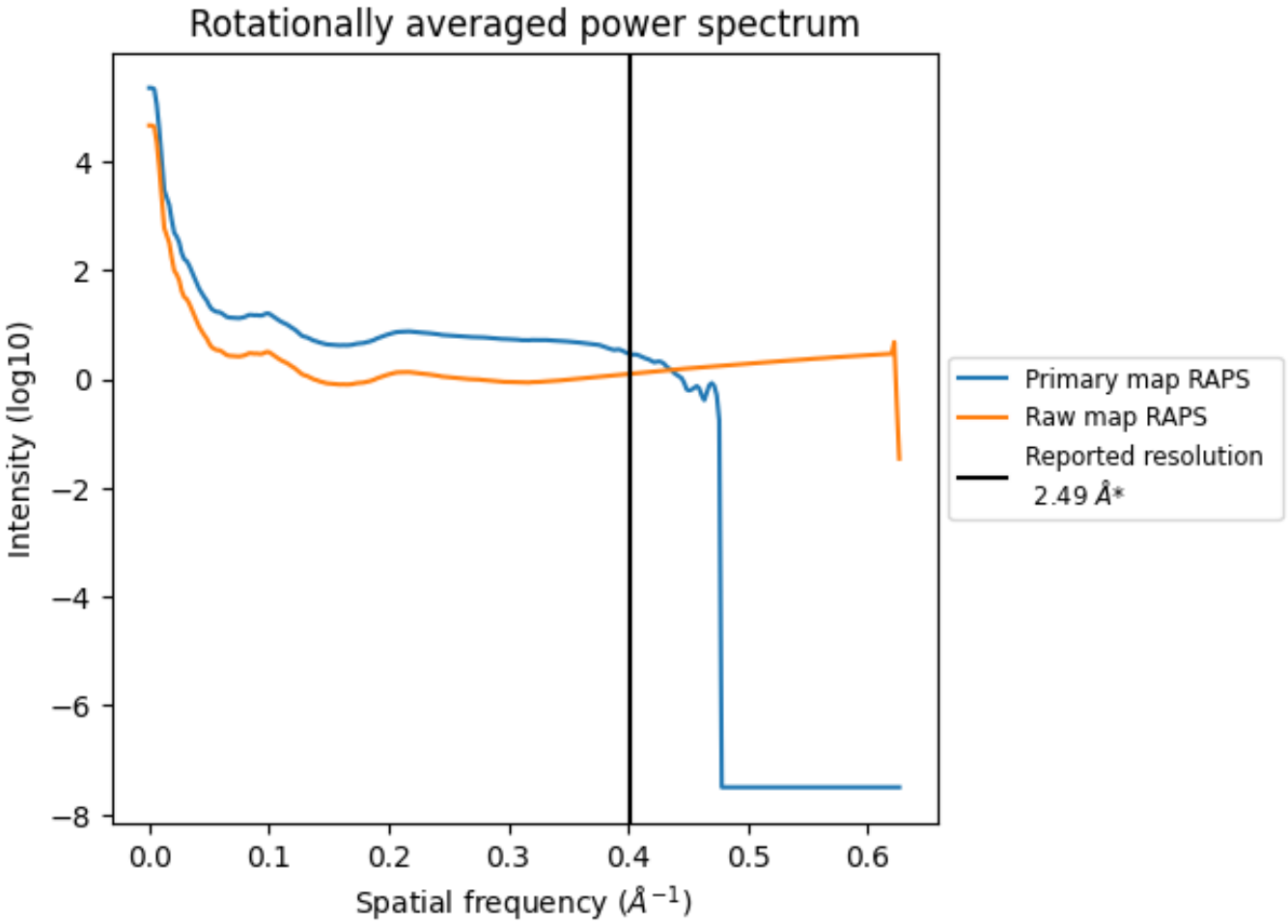
7.2 Volume estimate



The volume at the recommended contour level is 279 nm^3; this corresponds to an approximate mass of 252 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)

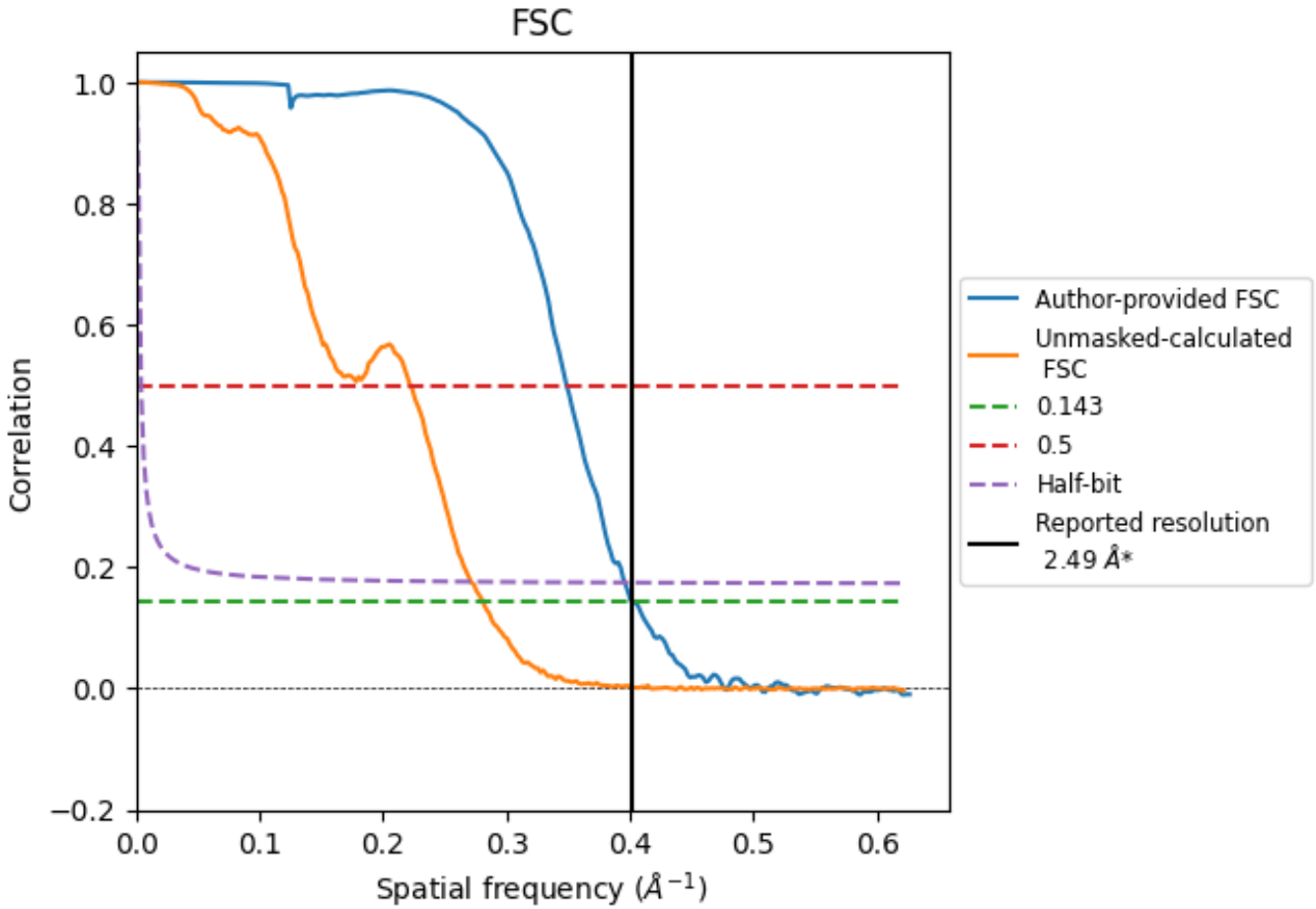


*Reported resolution corresponds to spatial frequency of 0.402 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.402 Å^{-1}

8.2 Resolution estimates (i)

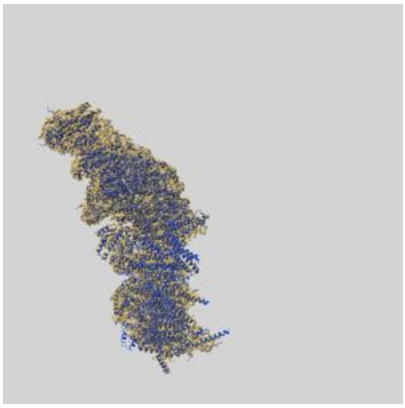
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.49	-	-
Author-provided FSC curve	2.49	2.87	2.53
Unmasked-calculated*	3.56	4.50	3.69

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.56 differs from the reported value 2.49 by more than 10 %

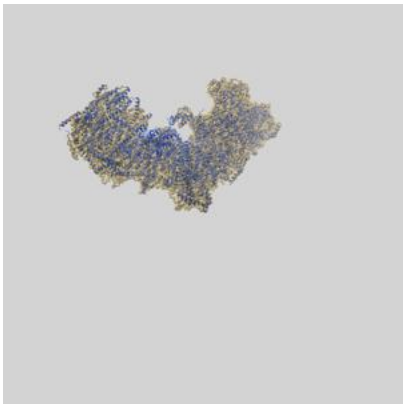
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-53491 and PDB model 9R13. Per-residue inclusion information can be found in section 3 on page 24.

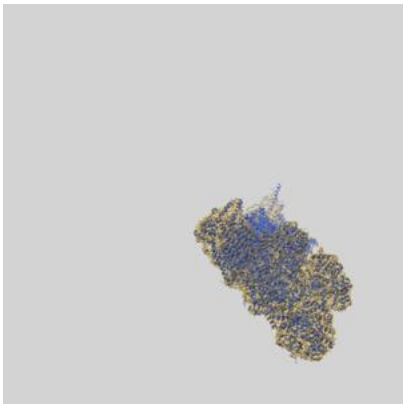
9.1 Map-model overlay



X



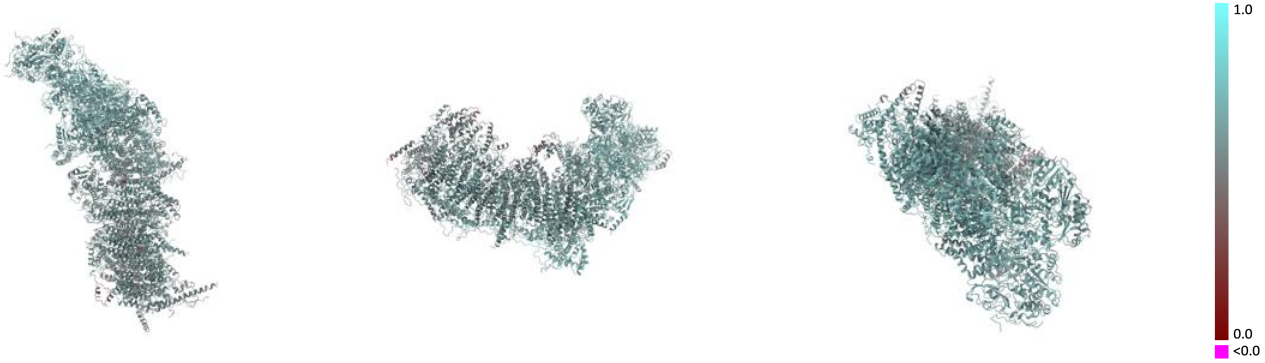
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.25 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.

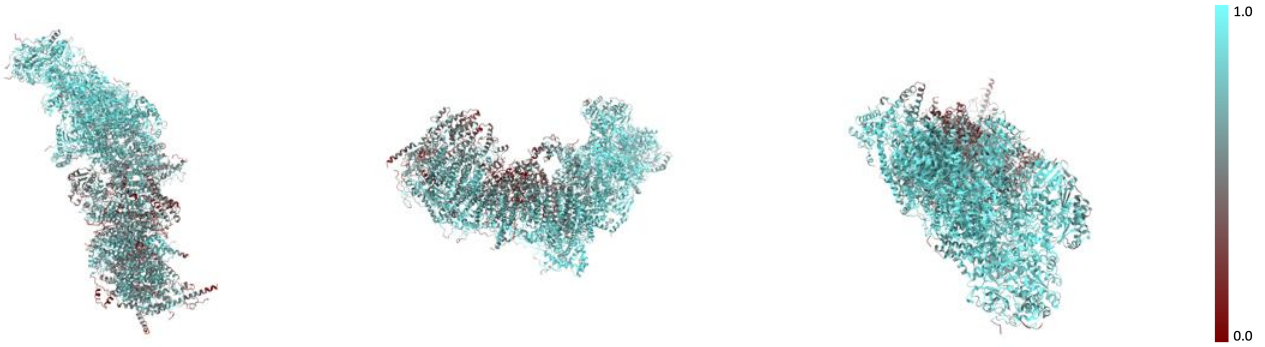
9.2 Q-score mapped to coordinate model



X Y Z

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

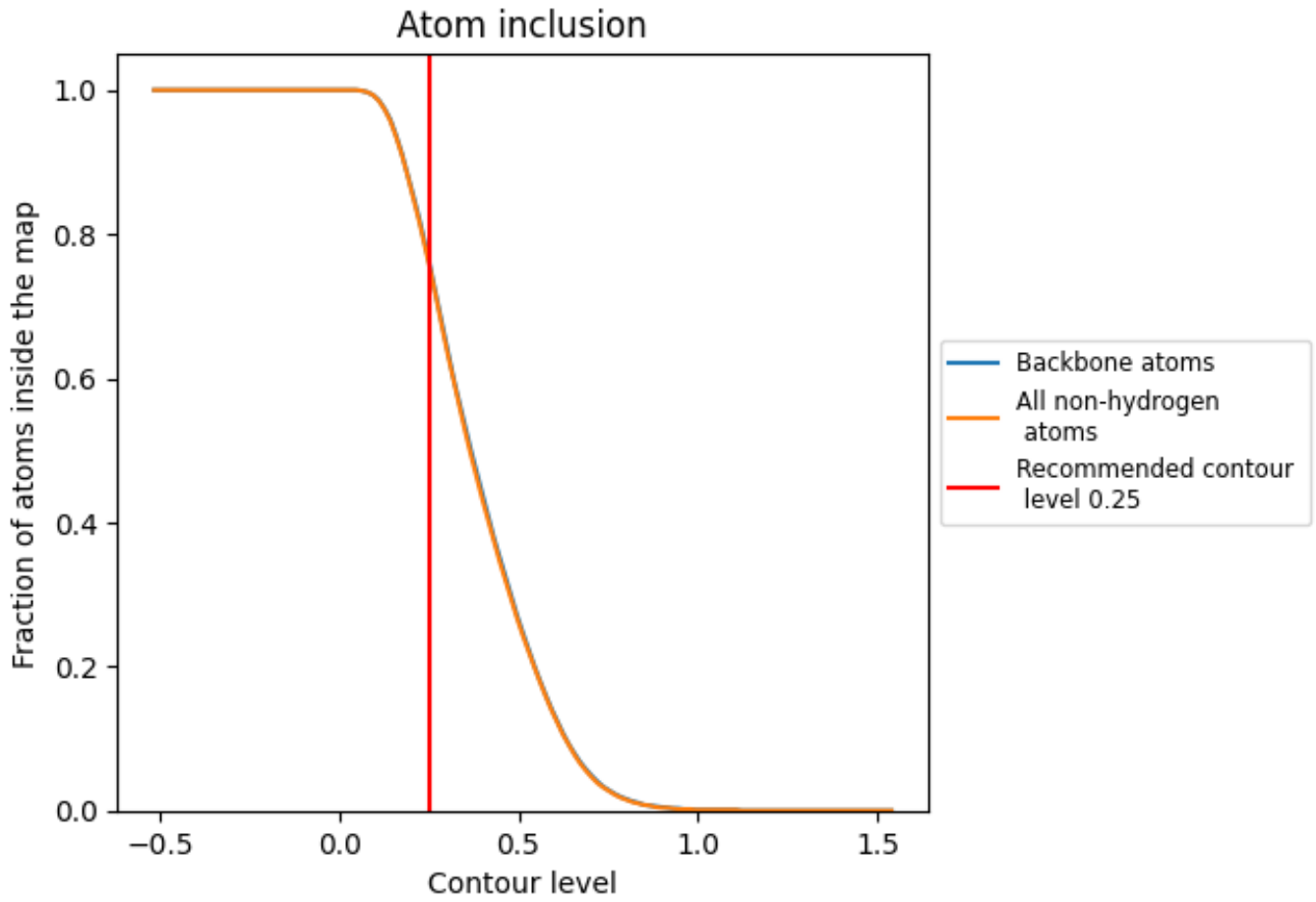
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.25).

9.4 Atom inclusion (i)



At the recommended contour level, 76% of all backbone atoms, 76% 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 (0.25) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7600	0.6170
A	0.7330	0.6180
B	0.9100	0.6630
C	0.9440	0.6740
D	0.8590	0.6670
E	0.8160	0.6100
F	0.8580	0.6290
G	0.8900	0.6500
H	0.8930	0.6550
I	0.9580	0.6830
J	0.7150	0.6180
K	0.8110	0.6450
L	0.6730	0.5990
M	0.8340	0.6320
N	0.8730	0.6450
O	0.5860	0.5740
P	0.7780	0.6120
Q	0.8750	0.6640
R	0.8810	0.6550
S	0.7410	0.6040
T	0.4380	0.5050
U	0.4630	0.5030
V	0.7960	0.6190
W	0.7910	0.6290
X	0.8240	0.6350
Y	0.3550	0.5670
Z	0.8190	0.6360
a	0.9130	0.6570
b	0.8310	0.6330
c	0.6740	0.5860
d	0.7460	0.6110
e	0.7740	0.6130
f	0.6120	0.5640
g	0.7110	0.5970
h	0.7700	0.6230



Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
i	0.4970	0.5100
j	0.5020	0.5310
k	0.4600	0.5020
l	0.5460	0.5650
m	0.5270	0.5660
n	0.6090	0.5460
o	0.5200	0.5240
p	0.7730	0.6020
q	0.8850	0.6580
r	0.9090	0.6570
s	0.7400	0.6150