Full wwPDB EM Validation Report ⓘ

Oct 26, 2026 – 01:05 pm GMT

PDB ID	:	9R12 / pdb_00009r12
EMDB ID	:	EMD-53490
Title	:	Bovine complex I at pH 6.0 in the active state
Authors	:	Fisher, W.; Grba, D.N.; Hirst, J.
Deposited on	:	2025-04-25
Resolution	:	2.26 Å(reported)
Based on initial model	:	7QSL

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:

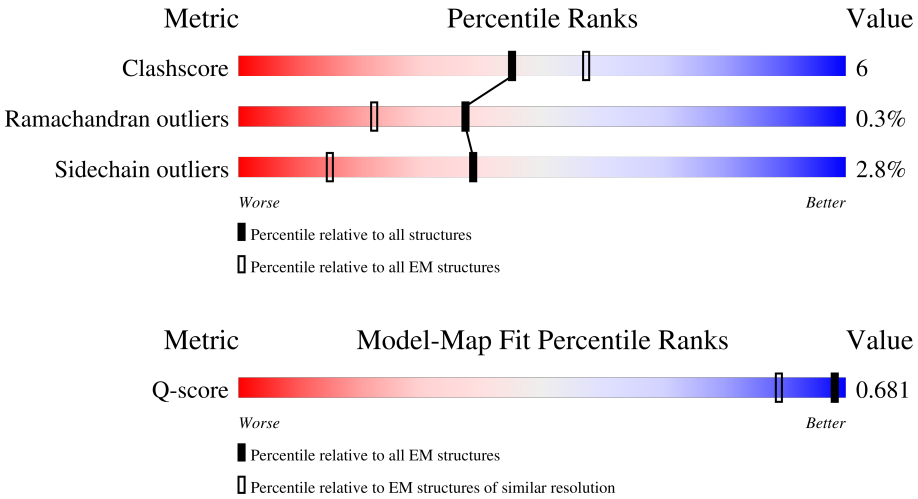
EMDB validation analysis	:	0.0.1.dev133
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.2
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data 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 2.26 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	3535 (1.76 - 2.76)

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	84% 15%
2	B	216	62% 8% 28%
3	C	266	73% 5% 21%
4	D	463	81% 12% 7%

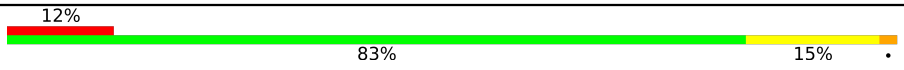
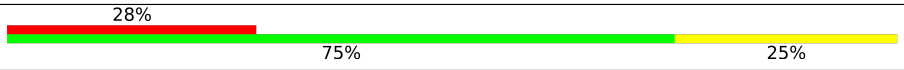
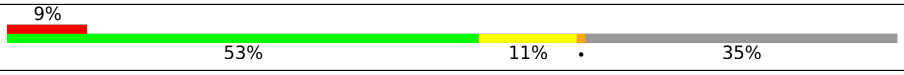
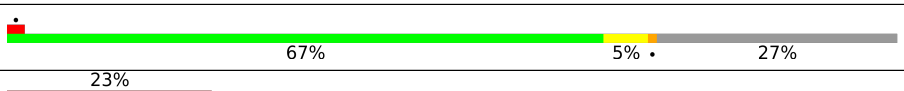
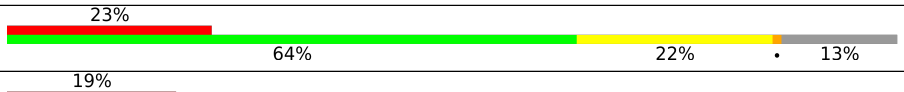
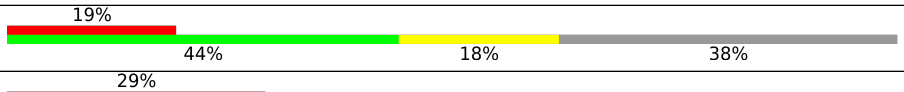
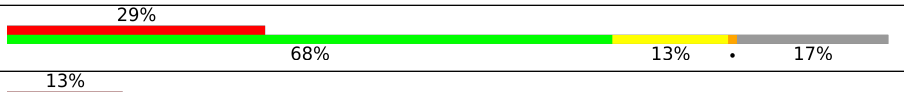
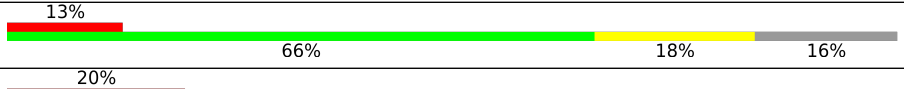
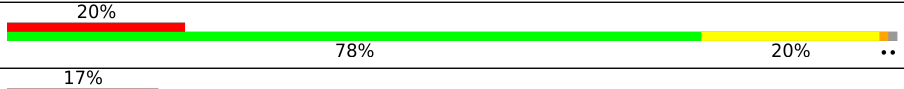
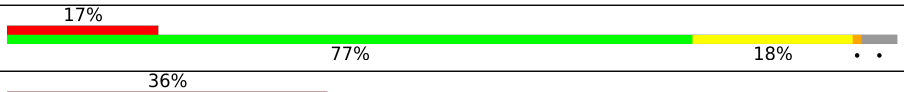
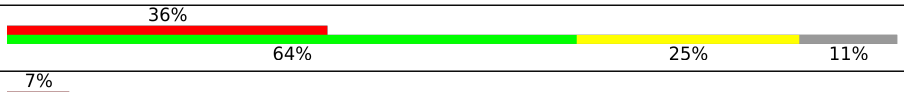
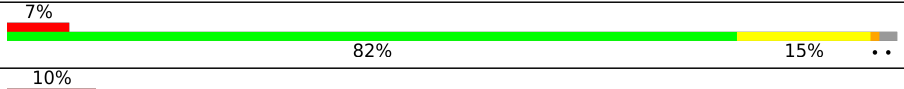
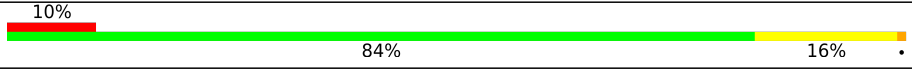
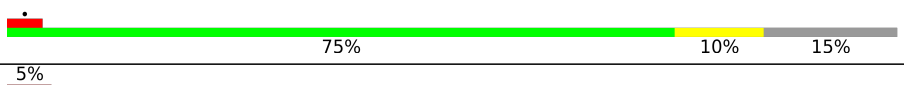
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Mol	Chain	Length	Quality of chain
5	E	249	6% 69% 16% 14%
6	F	464	80% 13% 7%
7	G	727	5% 80% 15%
8	H	318	83% 16%
9	I	212	73% 10% 17%
10	J	175	10% 82% 15%
11	K	98	74% 26%
12	L	606	5% 82% 17%
13	M	459	83% 16%
14	N	347	84% 16%
15	O	343	6% 76% 17% 7%
16	P	380	5% 72% 18% 10%
17	Q	175	5% 64% 8% 26%
18	R	124	9% 70% 7% 23%
19	S	99	9% 66% 22% 12%
20	T	156	33% 38% 15% 46%
20	U	156	11% 40% 14% 45%
21	V	116	7% 86% 14%
22	W	128	9% 76% 14% 10%
23	X	172	8% 92% 8%
24	Y	141	19% 82% 17%
25	Z	144	10% 85% 12%
26	a	70	87% 13%
27	b	84	15% 89% 11%
28	c	76	9% 63% 36%

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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	146	
43	r	113	
44	s	109	

2 Entry composition

There are 59 unique types of molecules in this entry. The entry contains 70211 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	155	1242	792	224	212	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	209	1738	1120	298	317	3	0	0

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

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

There is a discrepancy between the modelled and reference sequences:

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	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	699	Total	C	N	O	S	1	0
			5366	3362	934	1030	40		

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	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	606	Total	C	N	O	S	0	0
			4802	3195	737	827	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	342	Total	C	N	O	S	0	0
			2754	1781	487	481	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	87	Total	C	N	O	S	0	0
			700	440	131	127	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	86	Total	C	N	O	S	0	0
			693	447	102	139	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
21	V	116	Total	C	N	O	S	0	0
			931	602	157	169	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
V	0	ACE	-	acetylation	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
			976	625	181	166	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	84	Total	C	N	O	S	0	0
			654	427	109	116	2		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
b	0	ACE	-	acetylation	UNP Q02371

- 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	99	Total	C	N	O	S	0	0
			829	523	158	142	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	100	Total	C	N	O	S	0	0
			839	539	139	157	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	111	Total	C	N	O	S	0	0
			945	619	165	160	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	172	Total	C	N	O	S	0	0
			1492	955	273	257	7		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
41	p	173	Total	C	N	O	S	0	0
			1453	910	268	267	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
42	q	146	Total	C	N	O	S	0	0
			1212	780	216	211	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
q	0	ACE	-	acetylation	UNP O97725

- 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		

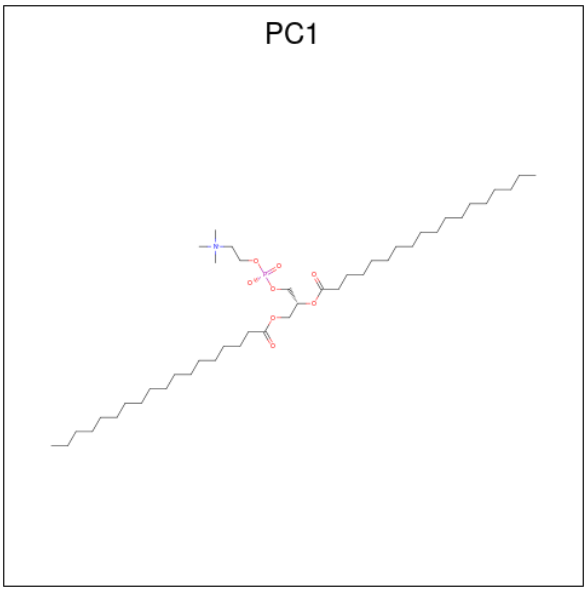
There is a discrepancy between the modelled and reference sequences:

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

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

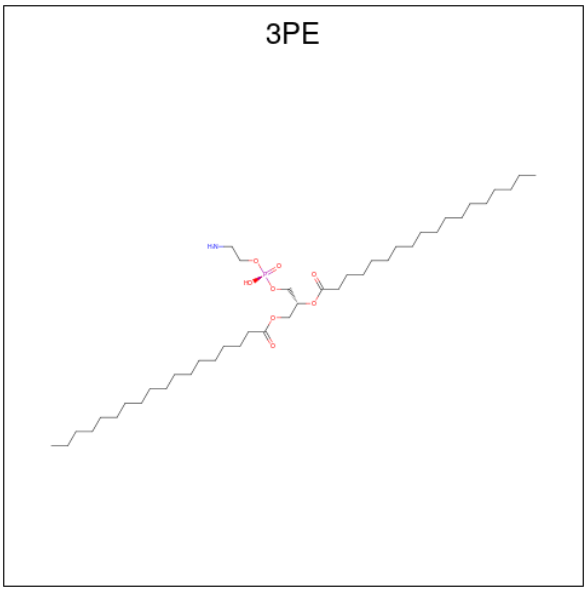
Mol	Chain	Residues	Atoms					AltConf	Trace
44	s	45	Total	C	N	O	S	1	0
			391	244	71	75	1		

- Molecule 45 is 1,2-DIACYL-SN-GLYCERO-3-PHOSPHOCHOLINE (CCD ID: PC1) (formula: $C_{44}H_{88}NO_8P$).



Mol	Chain	Residues	Atoms					AltConf
45	A	1	Total	C	N	O	P	0
			35	25	1	8	1	
45	A	1	Total	C	N	O	P	0
			33	23	1	8	1	
45	B	1	Total	C	N	O	P	0
			41	31	1	8	1	
45	B	1	Total	C	N	O	P	0
			54	44	1	8	1	
45	L	1	Total	C	N	O	P	0
			40	30	1	8	1	
45	M	1	Total	C	N	O	P	0
			39	29	1	8	1	
45	M	1	Total	C	N	O	P	0
			42	32	1	8	1	
45	Z	1	Total	C	N	O	P	0
			48	38	1	8	1	
45	d	1	Total	C	N	O	P	0
			33	23	1	8	1	

- Molecule 46 is 1,2-Distearoyl-sn-glycerophosphoethanolamine (CCD ID: 3PE) (formula: $C_{41}H_{82}NO_8P$).



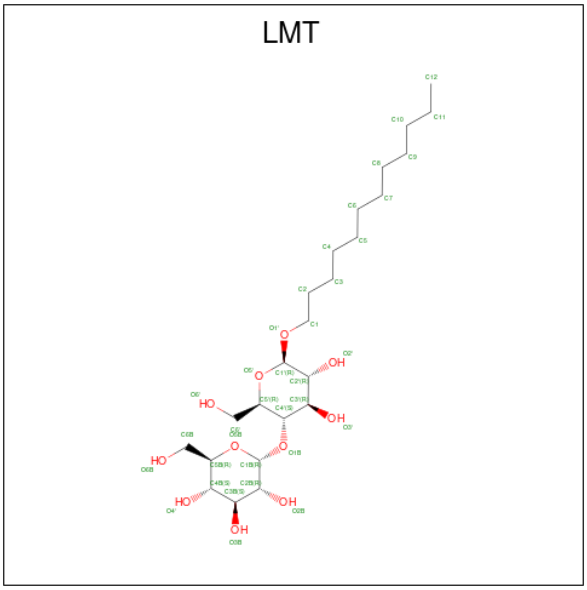
Mol	Chain	Residues	Atoms					AltConf
46	A	1	Total	C	N	O	P	0
			37	27	1	8	1	
46	H	1	Total	C	N	O	P	0
			29	19	1	8	1	
46	I	1	Total	C	N	O	P	0
			38	28	1	8	1	
46	I	1	Total	C	N	O	P	0
			35	25	1	8	1	
46	L	1	Total	C	N	O	P	0
			39	29	1	8	1	
46	L	1	Total	C	N	O	P	0
			45	35	1	8	1	
46	L	1	Total	C	N	O	P	0
			35	25	1	8	1	
46	M	1	Total	C	N	O	P	0
			45	35	1	8	1	
46	M	1	Total	C	N	O	P	0
			51	41	1	8	1	
46	N	1	Total	C	N	O	P	0
			51	41	1	8	1	
46	Y	1	Total	C	N	O	P	0
			40	30	1	8	1	
46	b	1	Total	C	N	O	P	0
			47	37	1	8	1	
46	d	1	Total	C	N	O	P	0
			48	38	1	8	1	
46	d	1	Total	C	N	O	P	0
			37	27	1	8	1	

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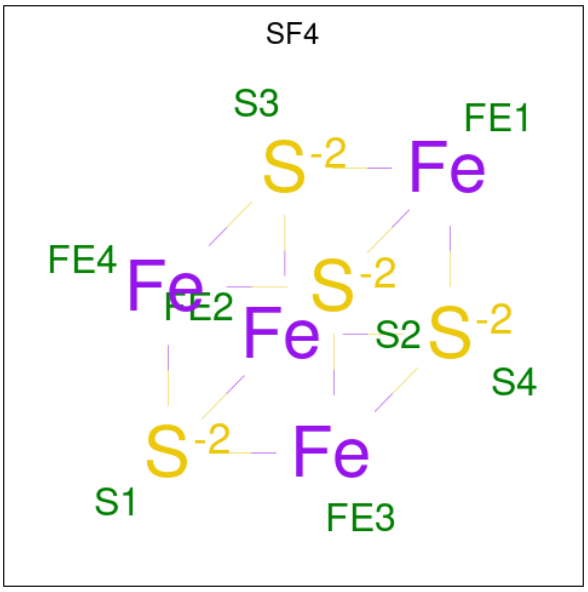
Mol	Chain	Residues	Atoms					AltConf
46	m	1	Total	C	N	O	P	0
			40	30	1	8	1	

- Molecule 47 is DODECYL-BETA-D-MALTOSIDE (CCD ID: LMT) (formula: $C_{24}H_{46}O_{11}$).



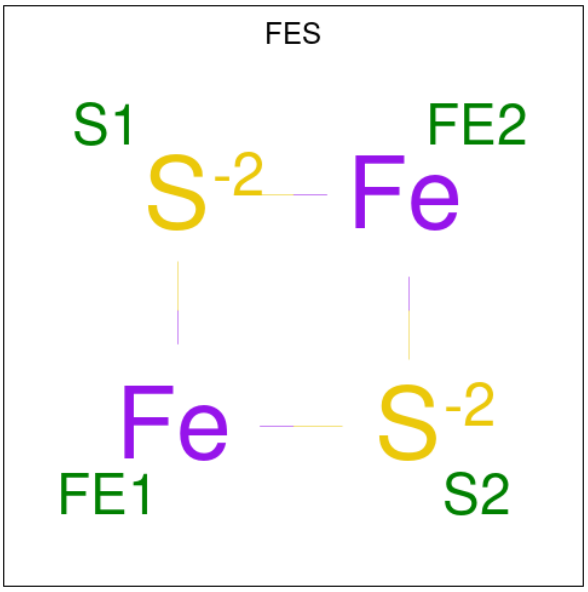
Mol	Chain	Residues	Atoms			AltConf
47	A	1	Total	C	O	0
			35	24	11	
47	L	1	Total	C	O	0
			35	24	11	
47	L	1	Total	C	O	0
			35	24	11	
47	M	1	Total	C	O	0
			35	24	11	
47	M	1	Total	C	O	0
			35	24	11	
47	Y	1	Total	C	O	0
			35	24	11	
47	i	1	Total	C	O	0
			35	24	11	
47	p	1	Total	C	O	0
			35	24	11	

- Molecule 48 is IRON/SULFUR CLUSTER (CCD ID: SF4) (formula: Fe_4S_4).



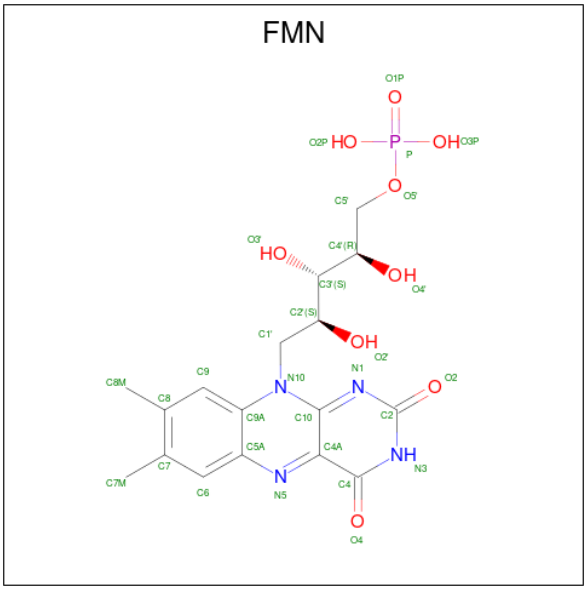
Mol	Chain	Residues	Atoms	AltConf
48	B	1	Total Fe S 8 4 4	0
48	F	1	Total Fe S 8 4 4	0
48	G	1	Total Fe S 8 4 4	0
48	G	1	Total Fe S 8 4 4	0
48	I	1	Total Fe S 8 4 4	0
48	I	1	Total Fe S 8 4 4	0

- 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: $C_{17}H_{21}N_4O_9P$).

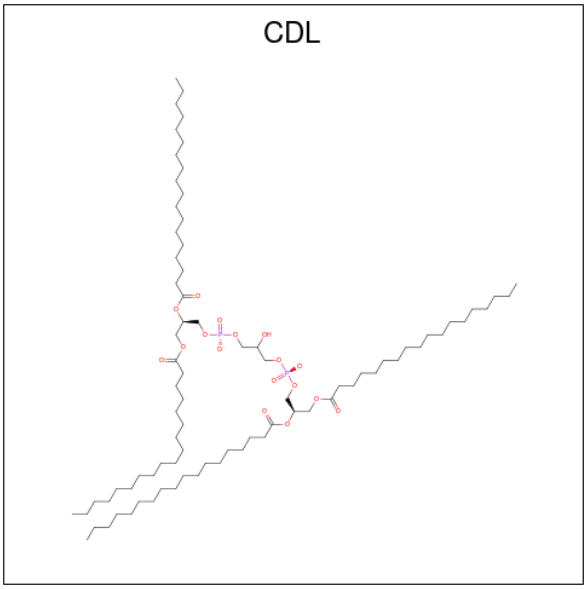


Mol	Chain	Residues	Atoms					AltConf
50	F	1	Total	C	N	O	P	0
			31	17	4	9	1	

- 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: $C_{81}H_{156}O_{17}P_2$).

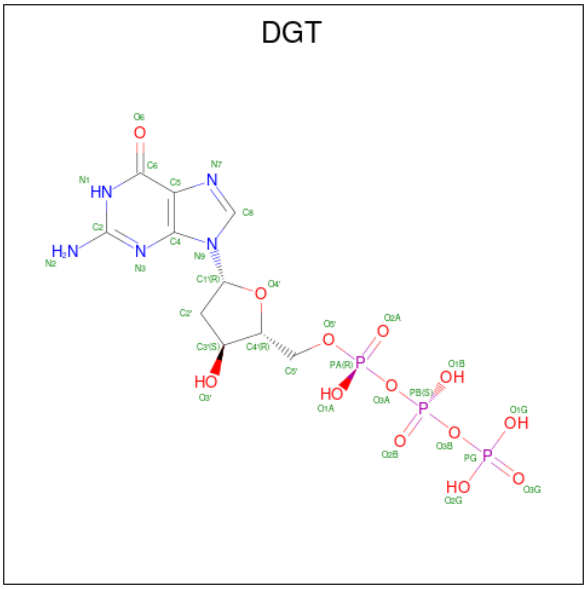


Mol	Chain	Residues	Atoms	AltConf
52	H	1	Total C O P 50 31 17 2	0
52	K	1	Total C O P 69 50 17 2	0
52	L	1	Total C O P 60 41 17 2	0
52	N	1	Total C O P 60 41 17 2	0
52	d	1	Total C O P 73 54 17 2	0
52	d	1	Total C O P 65 46 17 2	0
52	h	1	Total C O P 78 59 17 2	0
52	r	1	Total C O P 62 43 17 2	0

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

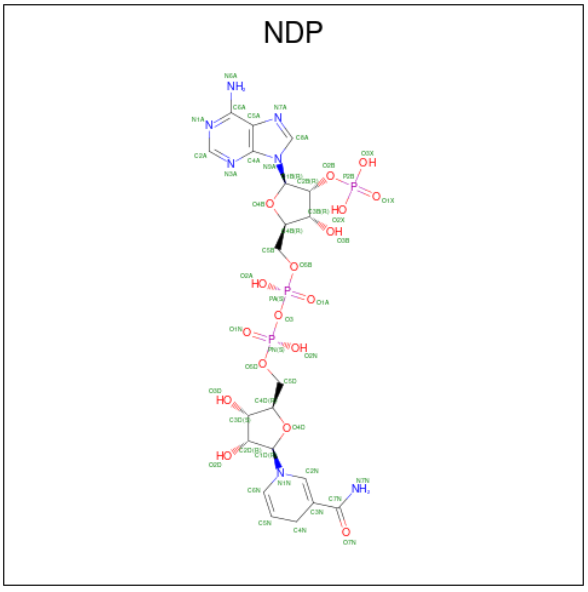
Mol	Chain	Residues	Atoms	AltConf
53	O	1	Total Mg 1 1	0

- 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: $C_{21}H_{30}N_7O_{17}P_3$).

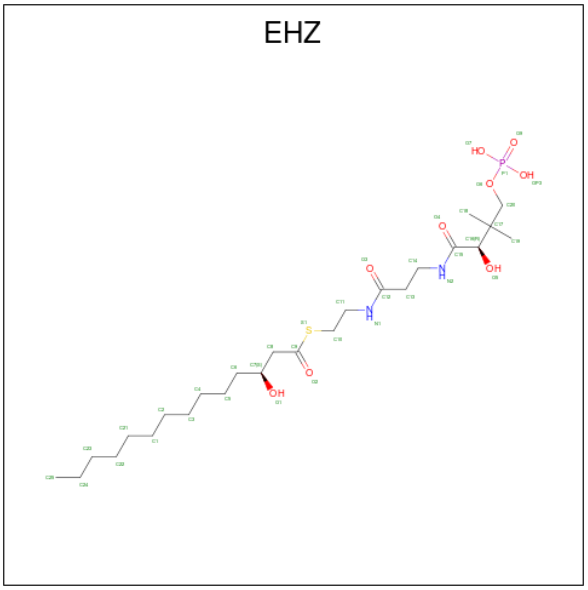


Mol	Chain	Residues	Atoms					AltConf
55	P	1	Total	C	N	O	P	0
			48	21	7	17	3	

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

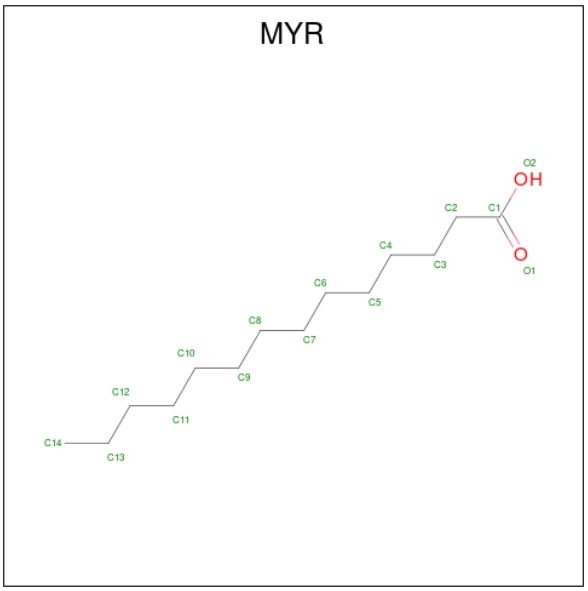
Mol	Chain	Residues	Atoms		AltConf
56	R	1	Total	Zn	0
			1	1	

- Molecule 57 is {S}-[2-[3-[[(2 {R})-3,3-dimethyl-2-oxidanyl-4-phosphonooxy-butanoyl]amino]propanoylamino]ethyl] (3 {S})-3-oxidanyltetradecanethioate (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	0
			37	25	2	8	1	1	
57	U	1	Total	C	N	O	P	S	0
			37	25	2	8	1	1	

- Molecule 58 is MYRISTIC ACID (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	49	Total O 49 49	0
59	B	69	Total O 69 69	0
59	C	90	Total O 90 90	0
59	D	172	Total O 172 172	0
59	E	13	Total O 13 13	0
59	F	34	Total O 34 34	0
59	G	149	Total O 149 149	0
59	H	154	Total O 154 154	0
59	I	84	Total O 84 84	0
59	J	56	Total O 56 56	0
59	K	47	Total O 47 47	0

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Mol	Chain	Residues	Atoms	AltConf
59	L	81	Total O 81 81	0
59	M	106	Total O 106 106	0
59	N	83	Total O 83 83	0
59	O	14	Total O 14 14	0
59	P	68	Total O 68 68	0
59	Q	61	Total O 61 61	0
59	R	21	Total O 21 21	0
59	S	1	Total O 1 1	0
59	T	1	Total O 1 1	0
59	U	3	Total O 3 3	0
59	V	3	Total O 3 3	0
59	W	16	Total O 16 16	0
59	X	33	Total O 33 33	0
59	Y	3	Total O 3 3	0
59	Z	34	Total O 34 34	0
59	a	27	Total O 27 27	0
59	b	2	Total O 2 2	0
59	d	16	Total O 16 16	0
59	e	21	Total O 21 21	0
59	f	4	Total O 4 4	0
59	g	4	Total O 4 4	0

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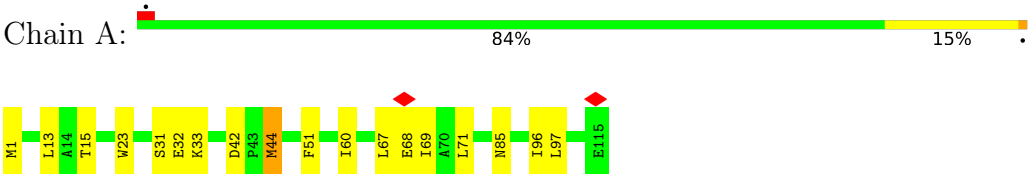
Mol	Chain	Residues	Atoms	AltConf
59	h	23	Total O 23 23	0
59	i	1	Total O 1 1	0
59	l	11	Total O 11 11	0
59	m	11	Total O 11 11	0
59	n	10	Total O 10 10	0
59	p	10	Total O 10 10	0
59	q	26	Total O 26 26	0
59	r	21	Total O 21 21	0
59	s	4	Total O 4 4	0

3 Residue-property plots (i)

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

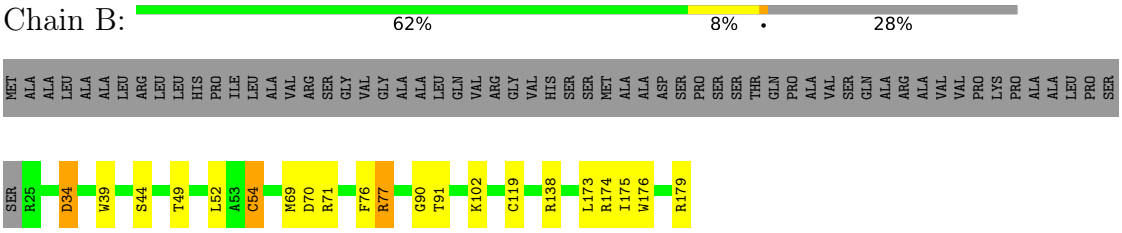
• Molecule 1: NADH-ubiquinone oxidoreductase chain 3

Chain A:



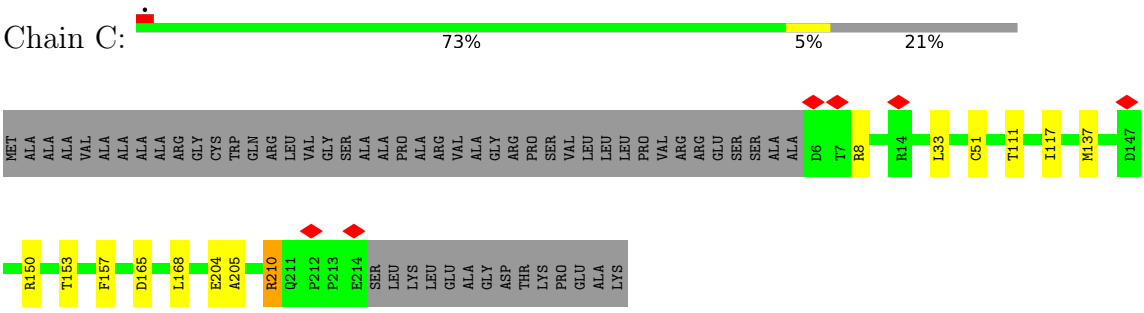
• Molecule 2: NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial

Chain B:



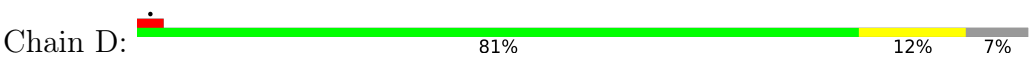
• Molecule 3: NADH dehydrogenase [ubiquinone] iron-sulfur protein 3, mitochondrial

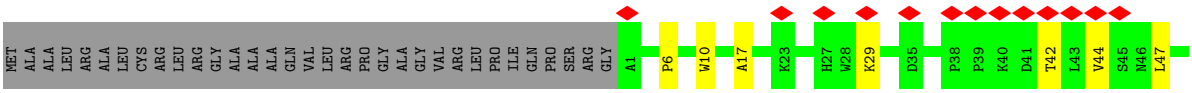
Chain C:

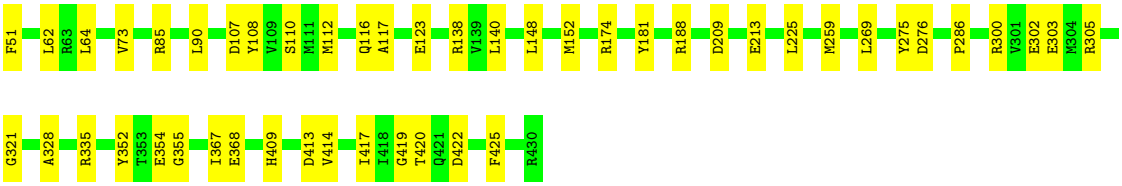


• Molecule 4: NADH dehydrogenase [ubiquinone] iron-sulfur protein 2, mitochondrial

Chain D:



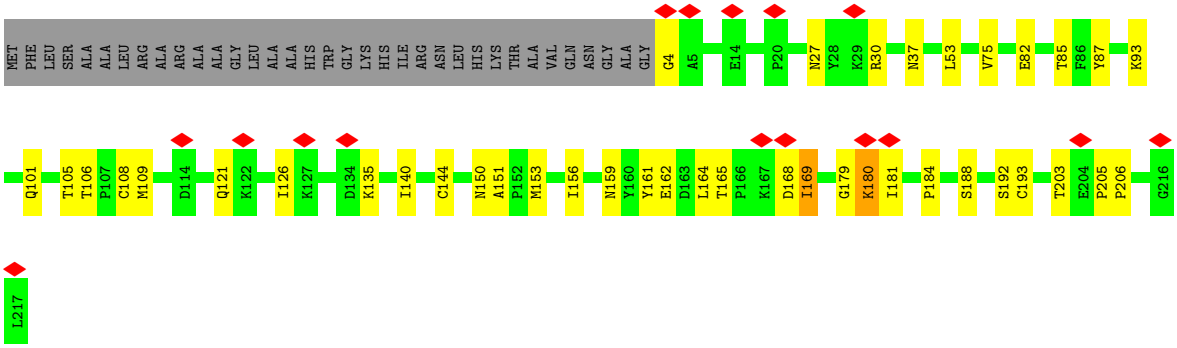




• Molecule 5: NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial

Chain E:

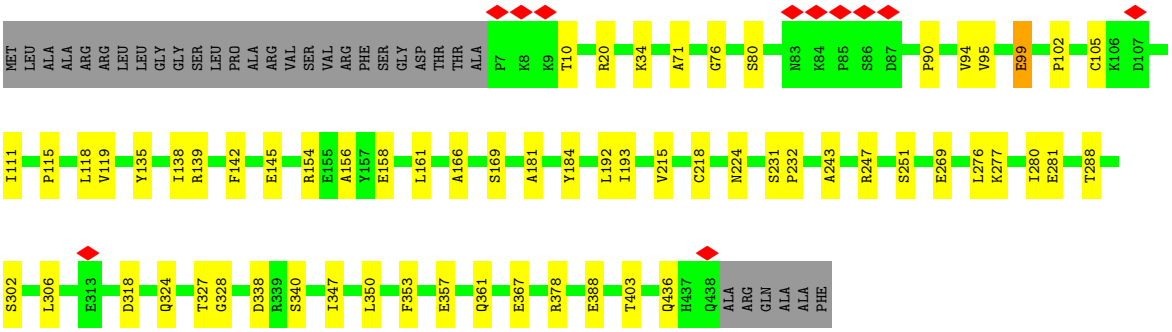




• Molecule 6: NADH dehydrogenase [ubiquinone] flavoprotein 1, mitochondrial

Chain F:

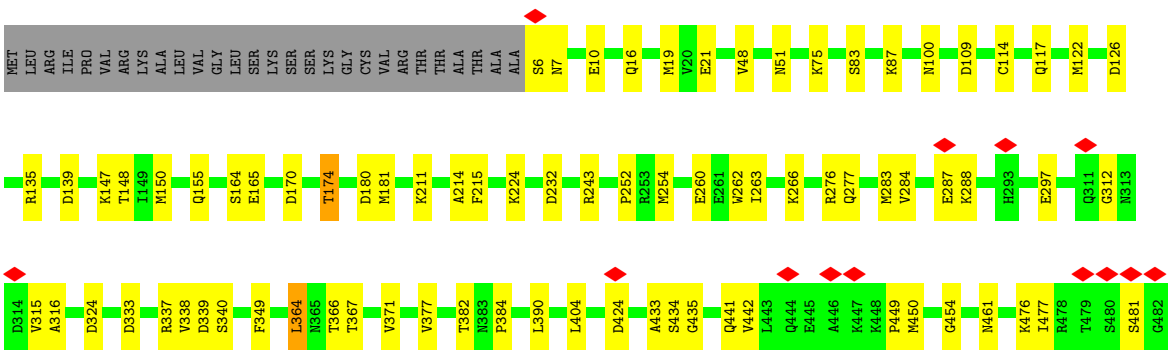


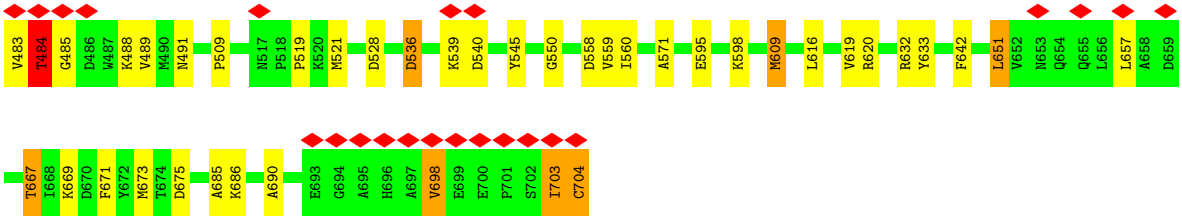


• Molecule 7: NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial

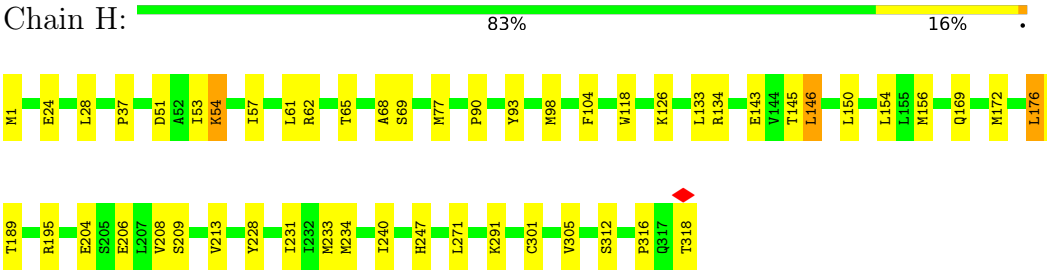
Chain G:



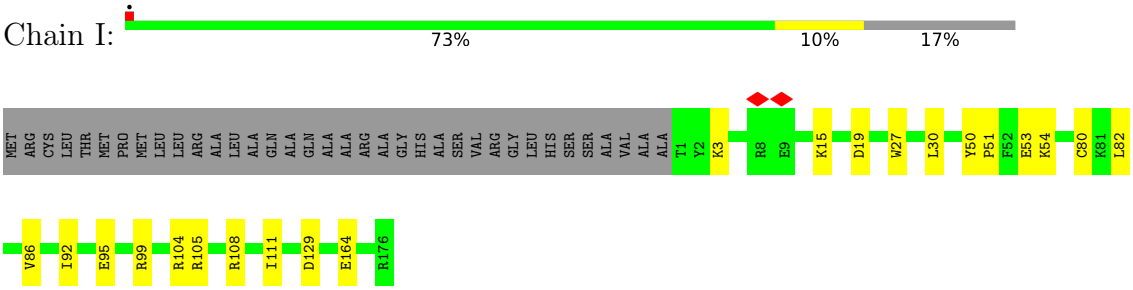




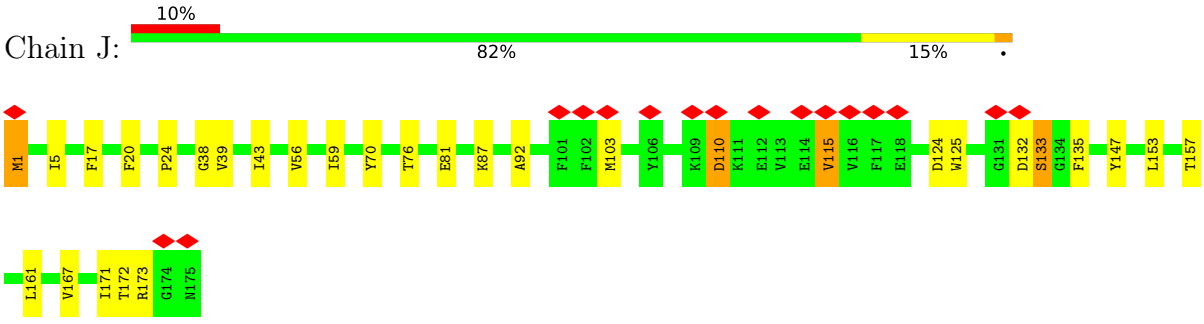
• Molecule 8: NADH-ubiquinone oxidoreductase chain 1



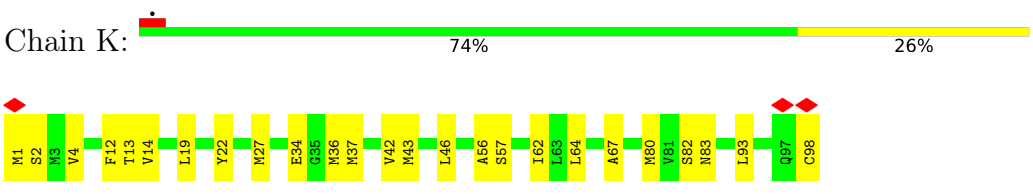
• Molecule 9: NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial



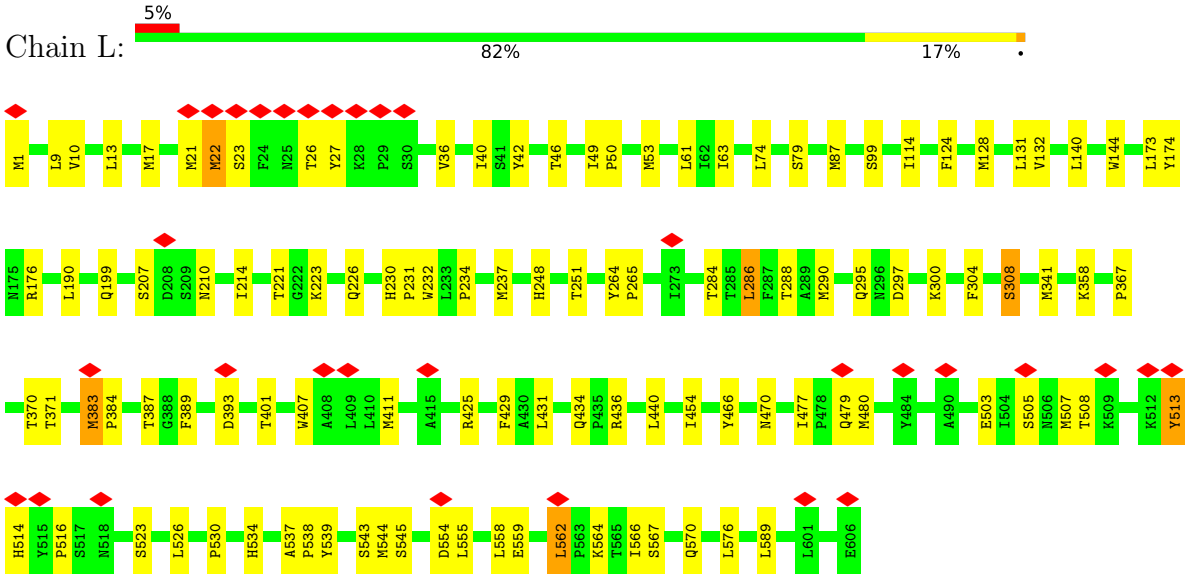
• Molecule 10: NADH-ubiquinone oxidoreductase chain 6



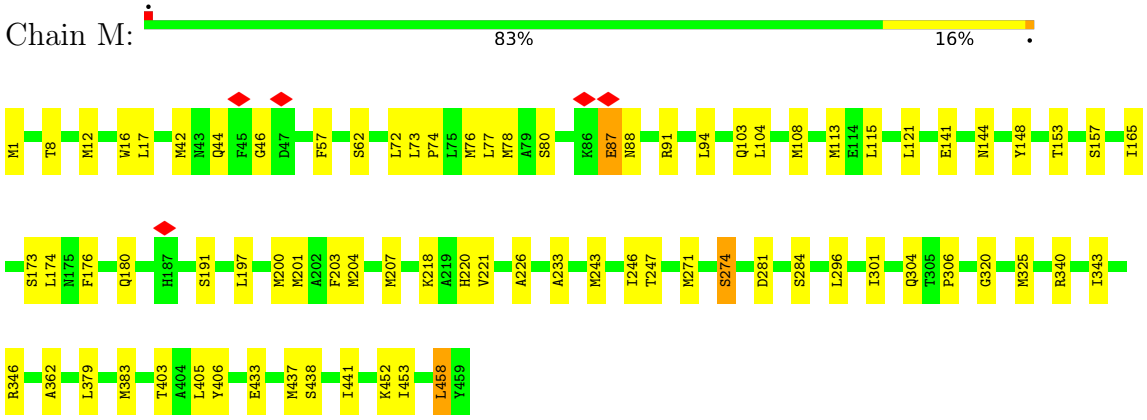
• Molecule 11: NADH-ubiquinone oxidoreductase chain 4L



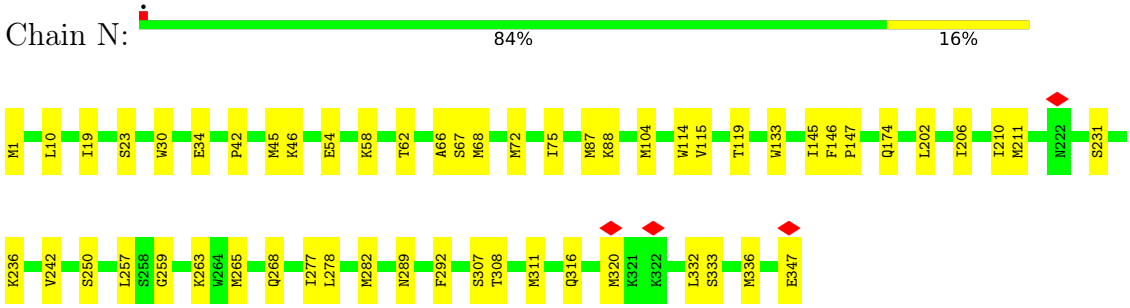
• Molecule 12: NADH-ubiquinone oxidoreductase chain 5



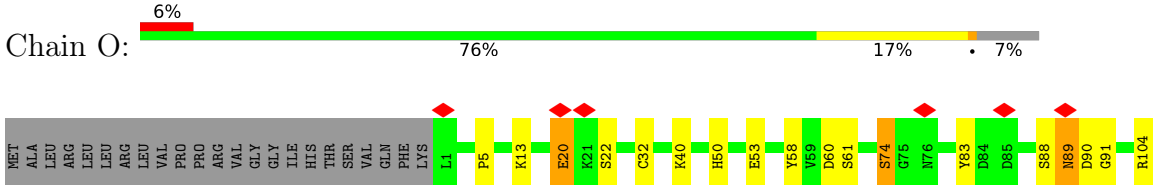
• Molecule 13: NADH-ubiquinone oxidoreductase chain 4

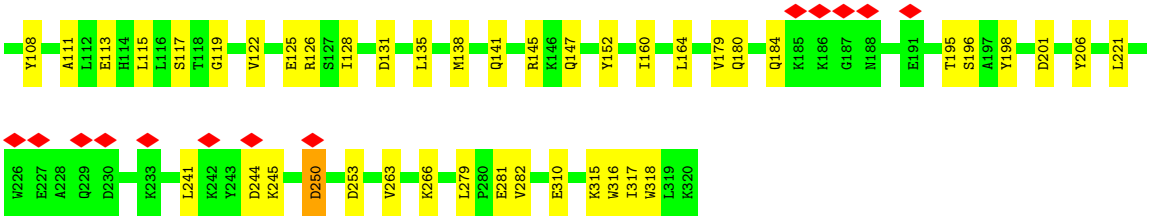


• Molecule 14: NADH-ubiquinone oxidoreductase chain 2

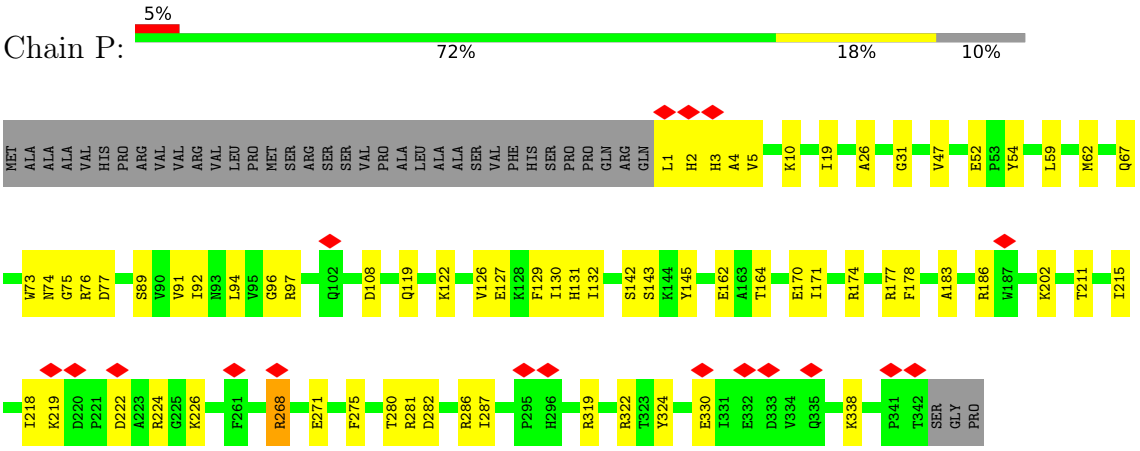


• Molecule 15: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial

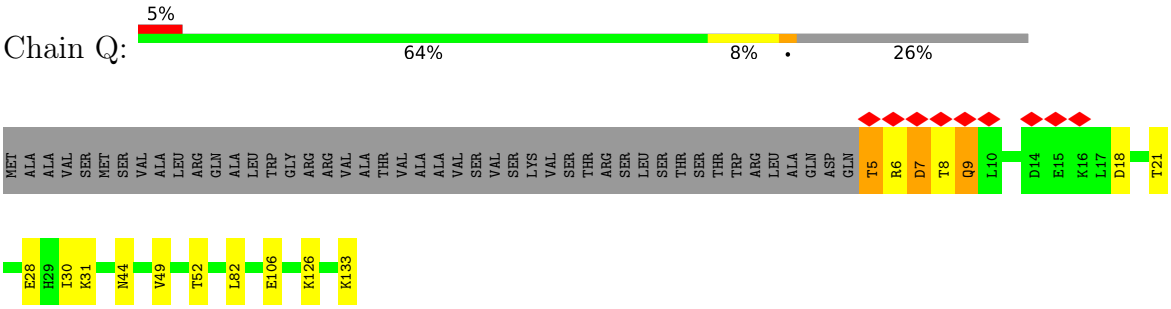




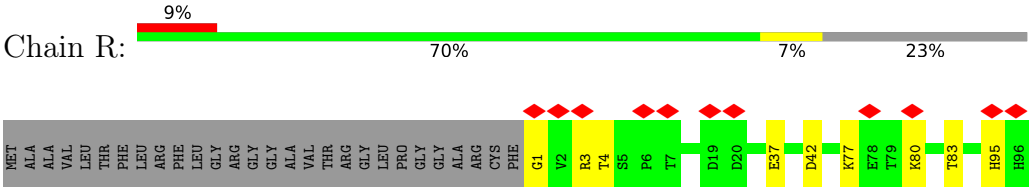
• Molecule 16: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 9, mitochondrial



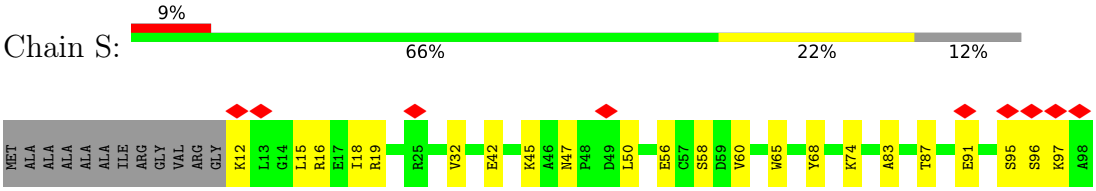
• Molecule 17: NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial



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

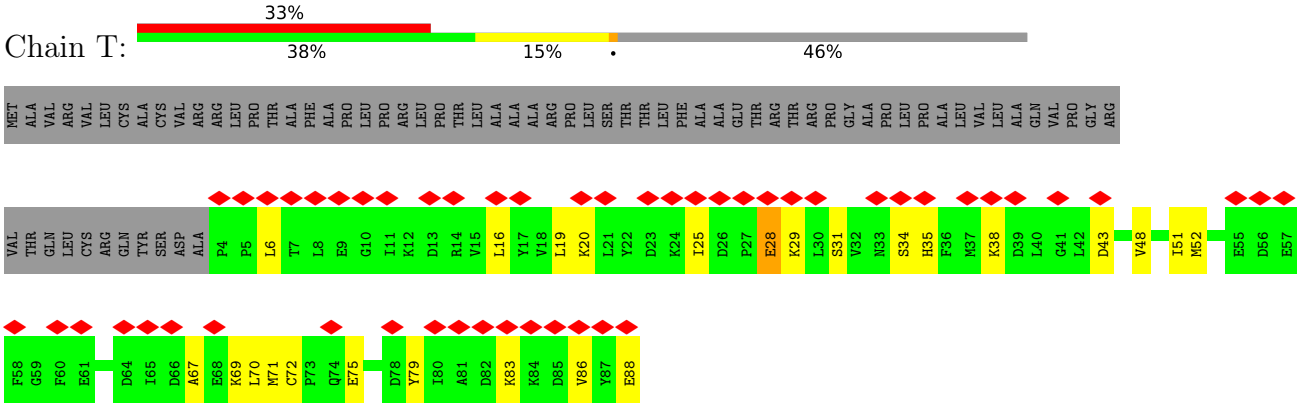


• Molecule 19: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2



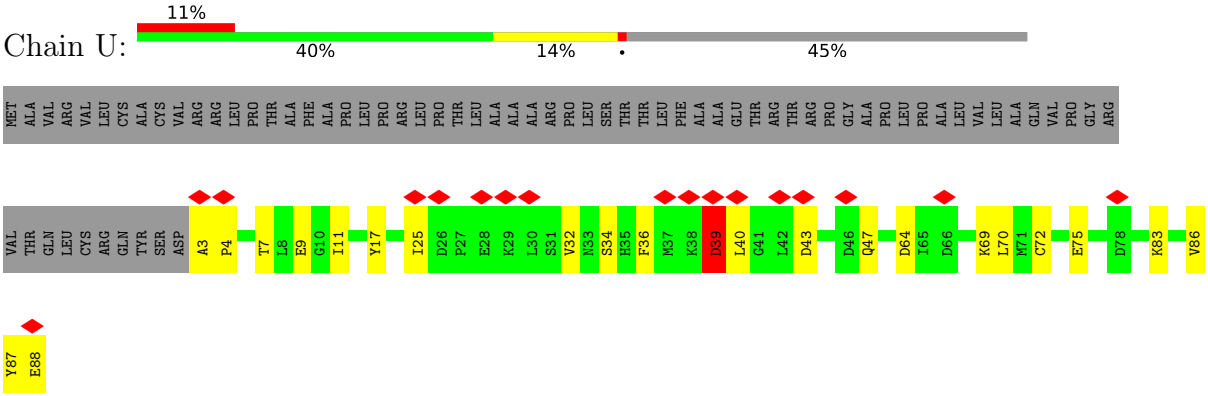
• Molecule 20: Acyl carrier protein, mitochondrial

Chain T:



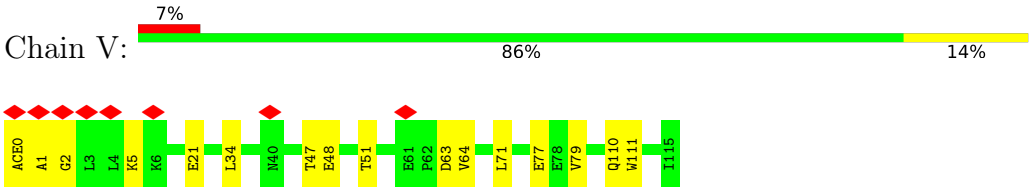
• Molecule 20: Acyl carrier protein, mitochondrial

Chain U:



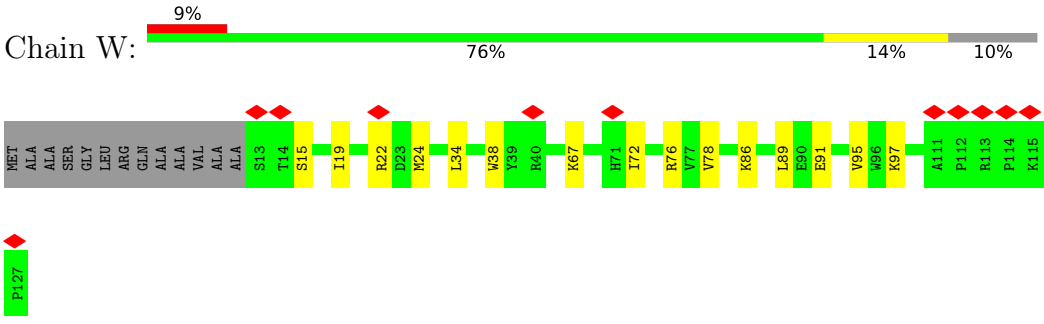
• Molecule 21: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 5

Chain V:



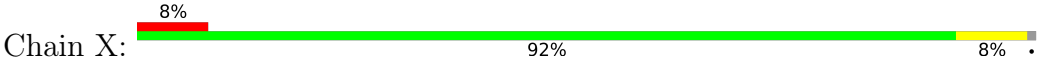
• Molecule 22: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 6

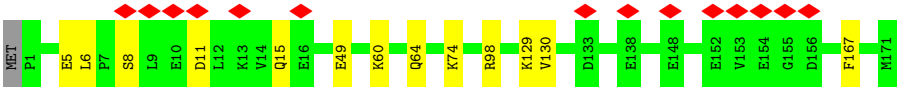
Chain W:



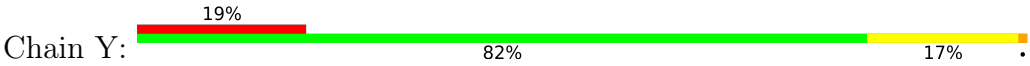
• Molecule 23: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8

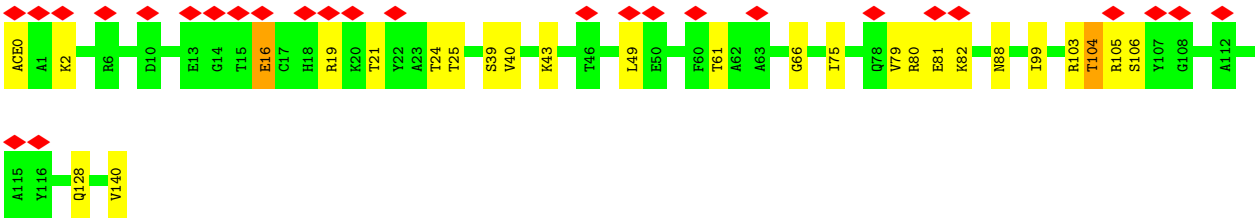
Chain X:



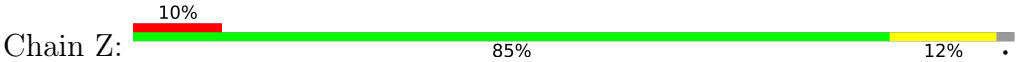


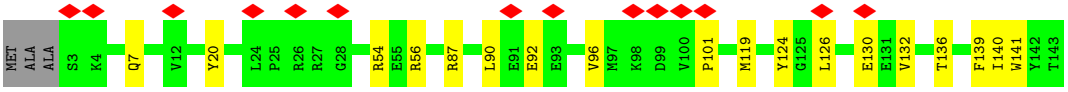
• Molecule 24: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11



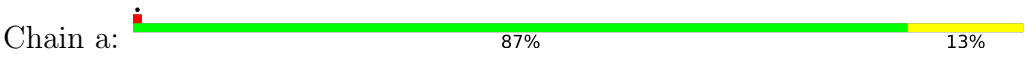


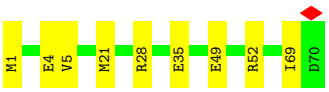
• Molecule 25: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 13



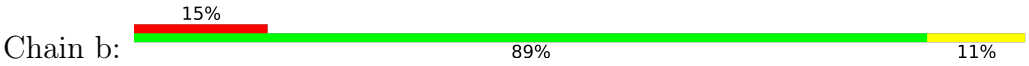


• Molecule 26: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1





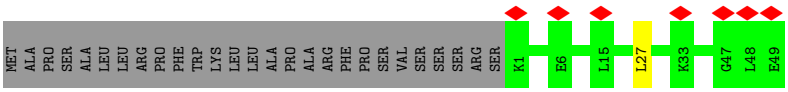
• Molecule 27: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3



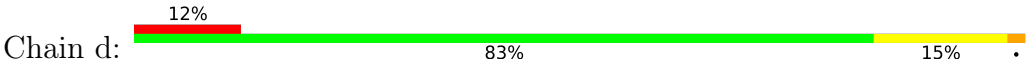


• Molecule 28: NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial





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

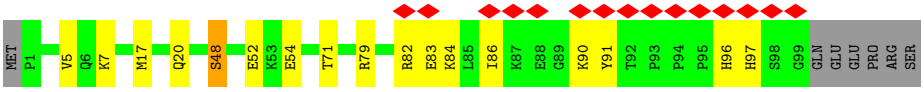




• Molecule 30: NADH dehydrogenase [ubiquinone] iron-sulfur protein 5

Chain e:

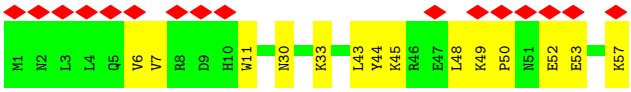




• Molecule 31: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1

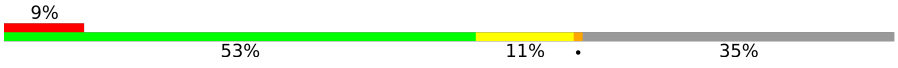
Chain f:

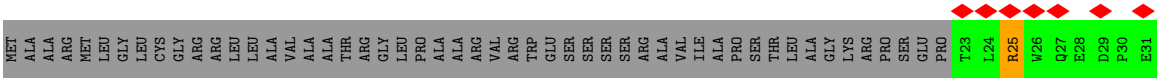


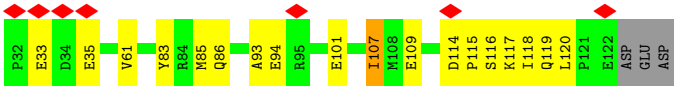


• Molecule 32: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial

Chain g:



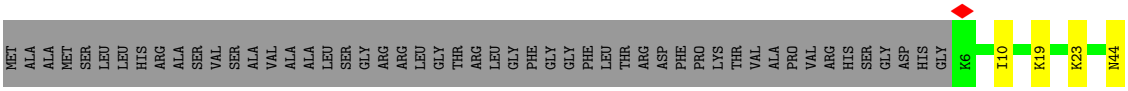


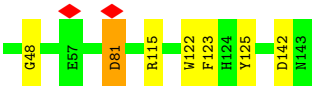


• Molecule 33: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 5, mitochondrial

Chain h:



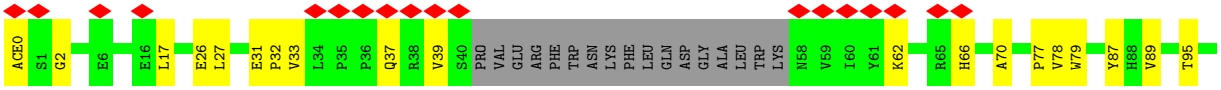


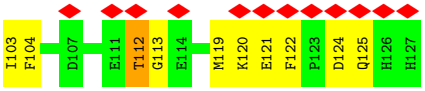


• Molecule 34: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 6

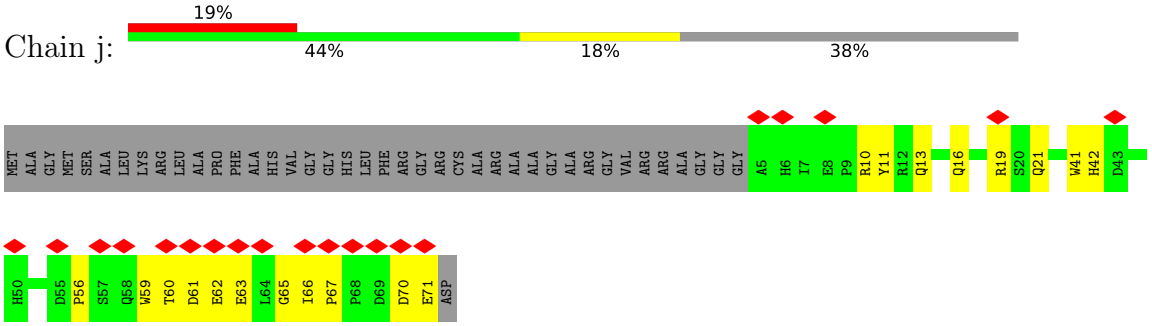
Chain i:



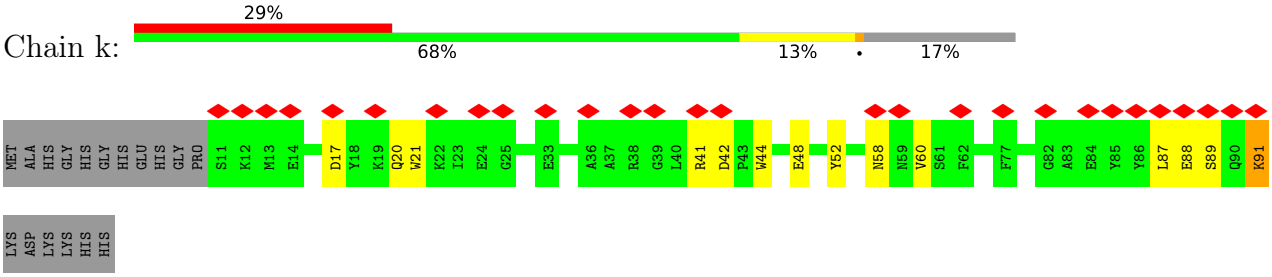




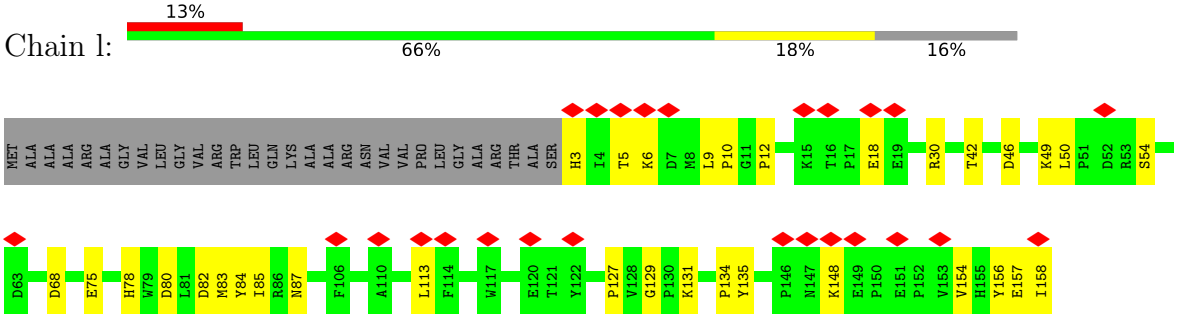
• Molecule 35: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 2, mitochondrial



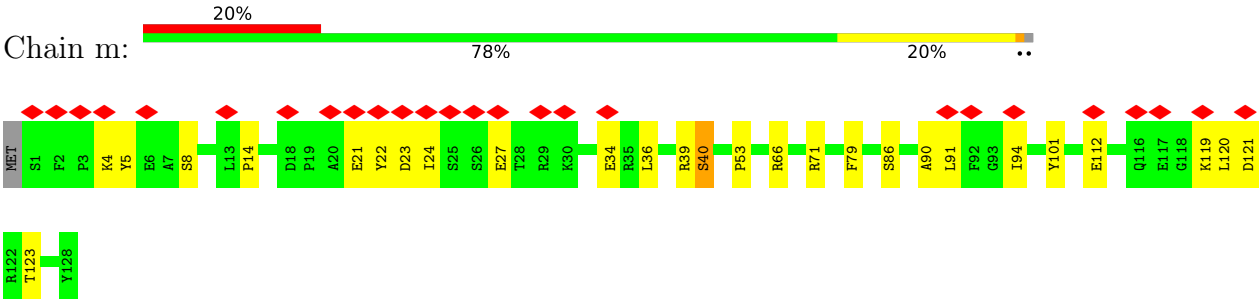
• Molecule 36: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 3



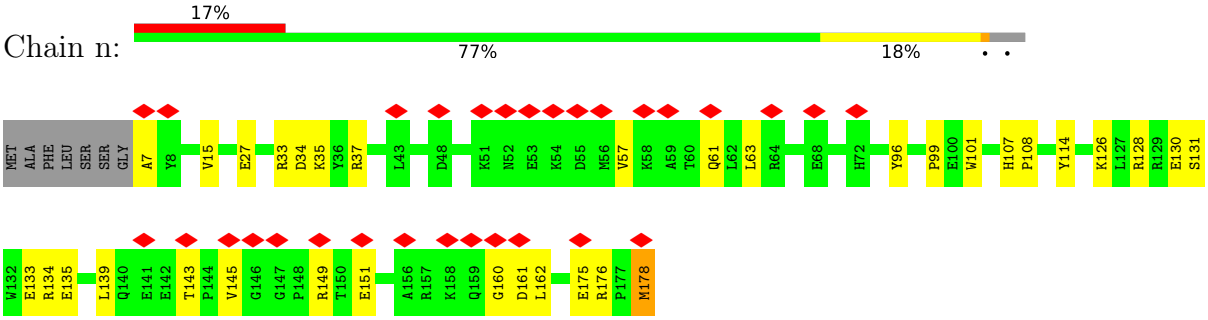
• Molecule 37: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial



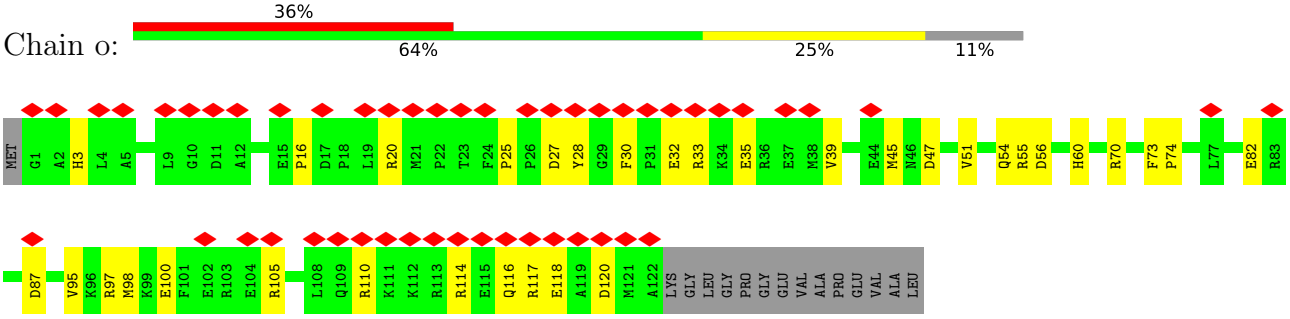
• Molecule 38: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4



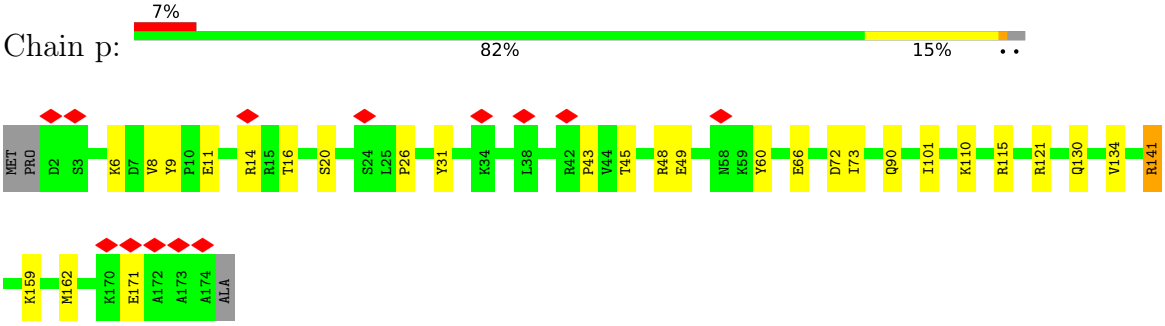
• Molecule 39: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 9



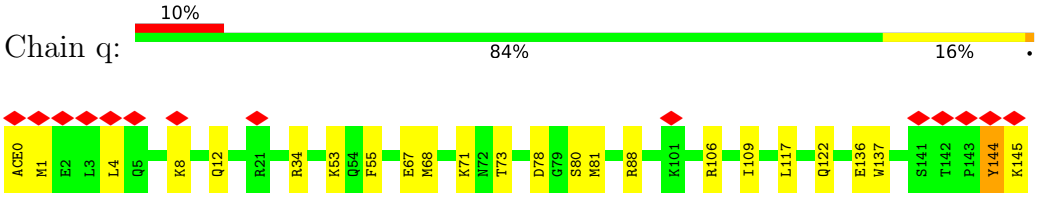
• Molecule 40: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 7



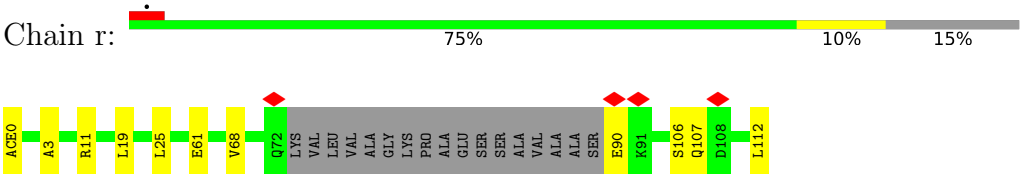
• Molecule 41: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10



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



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

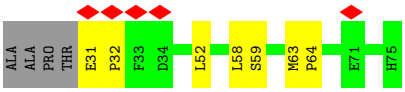


• Molecule 44: NADH dehydrogenase [ubiquinone] flavoprotein 3, mitochondrial

Chain s:


5%
35%
6%
59%


MET ALA ALA SER LEU LEU LEU ARG GLN GLY ARG ALA GLY ALA LEU LYS THR VAL LEU LEU GLU ALA GLY VAL PHE ARG GLY VAL ALA PRO ALA VAL SER LEU SER ALA GLU SER GLY LYS ASN GLU LYS GLY LEU PRO PRO ASN PRO LYS LYS GLN SER PRO PRO LYS LYS PRO VAL SER


ALA ALA PRO THR E31 P32 F33 D34 L52 L58 S59 M63 P64 E71 H75

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	247586	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	39.556	Depositor
Minimum map value	-15.932	Depositor
Average map value	0.163	Depositor
Map value standard deviation	1.740	Depositor
Recommended contour level	8.57	Depositor
Map size (Å)	237.804, 256.158, 339.948	wwPDB
Map dimensions	426, 321, 298	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, CDL, PC1, MG, NDP, MYR, SF4, K, DGT, EHZ, WYK, 3PE, ZN, FME, LMT, FES, ACE, FMN

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	0.34	0/936	0.37	0/1281
2	B	0.40	0/1260	0.43	0/1703
3	C	0.35	0/1789	0.41	2/2436 (0.1%)
4	D	0.37	0/3537	0.38	0/4794
5	E	0.33	0/1699	0.36	0/2312
6	F	0.36	0/3401	0.35	0/4595
7	G	0.37	0/5457	0.37	0/7397
8	H	0.36	0/2571	0.43	0/3513
9	I	0.38	0/1445	0.41	0/1956
10	J	0.31	0/1370	0.37	0/1859
11	K	0.32	0/745	0.38	0/1008
12	L	0.35	0/4920	0.35	0/6694
13	M	0.36	0/3779	0.37	0/5152
14	N	0.36	0/2792	0.41	0/3800
15	O	0.39	0/2651	0.30	0/3587
16	P	0.36	0/2831	0.36	0/3841
17	Q	0.34	0/1072	0.35	0/1449
18	R	0.35	0/753	0.36	0/1014
19	S	0.35	0/711	0.34	0/956
20	T	0.25	0/700	0.38	0/944
20	U	0.33	0/705	0.34	0/952
21	V	0.41	1/949 (0.1%)	0.34	0/1286
22	W	0.32	0/1000	0.33	0/1344
23	X	0.34	0/1439	0.34	0/1942
24	Y	0.36	1/1048 (0.1%)	0.29	0/1423
25	Z	0.34	0/1181	0.32	0/1592
26	a	0.37	0/584	0.39	0/786
27	b	0.41	1/673 (0.1%)	0.34	0/925
28	c	0.32	0/427	0.27	0/579
29	d	0.39	1/1027 (0.1%)	0.38	0/1387
30	e	0.34	0/850	0.35	0/1136

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
31	f	0.30	0/505	0.35	0/681
32	g	0.33	0/865	0.39	0/1175
33	h	0.36	0/1188	0.32	0/1607
34	i	0.38	1/974 (0.1%)	0.33	0/1325
35	j	0.33	0/607	0.32	0/833
36	k	0.27	0/672	0.31	0/906
37	l	0.34	0/1369	0.30	0/1873
38	m	0.34	0/1094	0.33	0/1480
39	n	0.35	0/1545	0.28	0/2092
40	o	0.30	0/1073	0.33	0/1437
41	p	0.36	0/1486	0.33	0/2004
42	q	0.38	1/1251 (0.1%)	0.38	0/1700
43	r	0.40	1/795 (0.1%)	0.39	0/1077
44	s	0.31	0/403	0.30	0/545
All	All	0.36	7/68129 (0.0%)	0.36	2/92378 (0.0%)

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
27	b	0	ACE	C-N	6.32	1.46	1.33
42	q	0	ACE	C-N	6.30	1.46	1.33
21	V	0	ACE	C-N	6.13	1.45	1.33
29	d	0	ACE	C-N	5.97	1.45	1.33
34	i	0	ACE	C-N	5.92	1.45	1.33
24	Y	0	ACE	C-N	5.89	1.45	1.33
43	r	0	ACE	C-N	5.62	1.44	1.33

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	210	ARG	CA-C-N	6.06	132.46	120.94
3	C	210	ARG	C-N-CA	6.06	132.46	120.94

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	921	0	952	12	0
2	B	1242	0	1238	15	0
3	C	1738	0	1685	9	0
4	D	3459	0	3404	34	0
5	E	1659	0	1664	22	0
6	F	3326	0	3282	35	0
7	G	5366	0	5378	82	0
8	H	2509	0	2621	43	0
9	I	1414	0	1370	12	0
10	J	1345	0	1352	28	0
11	K	745	0	785	25	0
12	L	4802	0	4960	73	0
13	M	3694	0	3891	54	0
14	N	2733	0	2912	42	0
15	O	2589	0	2565	35	0
16	P	2754	0	2773	48	0
17	Q	1049	0	1045	10	0
18	R	740	0	714	6	0
19	S	700	0	719	12	0
20	T	688	0	684	16	0
20	U	693	0	688	14	0
21	V	931	0	973	10	0
22	W	976	0	991	9	0
23	X	1402	0	1377	8	0
24	Y	1030	0	1039	15	0
25	Z	1152	0	1151	15	0
26	a	569	0	568	6	0
27	b	654	0	663	6	0
28	c	414	0	415	1	0
29	d	999	0	988	18	0
30	e	829	0	829	12	0
31	f	492	0	501	6	0
32	g	839	0	790	16	0
33	h	1154	0	1168	13	0
34	i	945	0	960	23	0
35	j	580	0	519	16	0
36	k	653	0	639	9	0
37	l	1314	0	1210	22	0
38	m	1067	0	1067	16	0
39	n	1492	0	1438	24	0
40	o	1048	0	1014	32	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
41	p	1453	0	1425	22	0
42	q	1212	0	1183	17	0
43	r	776	0	782	6	0
44	s	391	0	361	5	0
45	A	68	0	84	4	0
45	B	95	0	144	7	0
45	L	40	0	54	0	0
45	M	81	0	113	6	0
45	Z	48	0	73	10	0
45	d	33	0	40	4	0
46	A	37	0	48	1	0
46	H	29	0	32	1	0
46	I	73	0	94	1	0
46	L	119	0	163	5	0
46	M	96	0	146	12	0
46	N	51	0	82	2	0
46	Y	40	0	57	1	0
46	b	47	0	71	3	0
46	d	85	0	121	9	0
46	m	40	0	57	3	0
47	A	35	0	46	4	0
47	L	70	0	92	4	0
47	M	70	0	92	5	0
47	Y	35	0	46	5	0
47	i	35	0	46	4	0
47	p	35	0	46	0	0
48	B	8	0	0	1	0
48	F	8	0	0	1	0
48	G	16	0	0	0	0
48	I	16	0	0	0	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	H	50	0	44	4	0
52	K	69	0	82	5	0
52	L	60	0	64	0	0
52	N	60	0	64	8	0
52	d	138	0	170	9	0
52	h	78	0	100	8	0
52	r	62	0	68	2	0
53	O	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
54	O	31	0	12	3	0
55	P	48	0	24	4	0
56	R	1	0	0	0	0
57	T	37	0	0	0	0
57	U	37	0	0	0	0
58	o	15	0	27	1	0
59	A	49	0	0	1	0
59	B	69	0	0	4	0
59	C	90	0	0	0	0
59	D	172	0	0	7	0
59	E	13	0	0	1	0
59	F	34	0	0	1	0
59	G	149	0	0	11	0
59	H	154	0	0	11	0
59	I	84	0	0	0	0
59	J	56	0	0	6	0
59	K	47	0	0	6	0
59	L	81	0	0	7	0
59	M	106	0	0	3	0
59	N	83	0	0	4	0
59	O	14	0	0	2	0
59	P	68	0	0	4	0
59	Q	61	0	0	0	0
59	R	21	0	0	0	0
59	S	1	0	0	0	0
59	T	1	0	0	0	0
59	U	3	0	0	0	0
59	V	3	0	0	1	0
59	W	16	0	0	0	0
59	X	33	0	0	1	0
59	Y	3	0	0	0	0
59	Z	34	0	0	1	0
59	a	27	0	0	2	0
59	b	2	0	0	0	0
59	d	16	0	0	1	0
59	e	21	0	0	1	0
59	f	4	0	0	0	0
59	g	4	0	0	0	0
59	h	23	0	0	3	0
59	i	1	0	0	0	0
59	l	11	0	0	0	0
59	m	11	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
59	n	10	0	0	0	0
59	p	10	0	0	0	0
59	q	26	0	0	0	0
59	r	21	0	0	0	0
59	s	4	0	0	0	0
All	All	70211	0	69154	868	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 6.

All (868) 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)
29:d:1:MET:HB2	33:h:122:TRP:HB3	1.55	0.88
7:G:703:ILE:HG21	18:R:83:THR:HB	1.58	0.85
3:C:8:ARG:NH2	43:r:61:GLU:OE1	2.13	0.81
12:L:176:ARG:NH1	59:L:801:HOH:O	2.15	0.80
31:f:53:GLU:OE2	31:f:53:GLU:N	2.15	0.79
7:G:703:ILE:O	59:G:901:HOH:O	2.02	0.78
11:K:37:MET:HE3	14:N:68:MET:HE1	1.68	0.76
2:B:77:WYK:NH2	59:B:302:HOH:O	2.18	0.75
13:M:108:MET:HE1	52:d:202:CDL:H222	1.68	0.75
5:E:150:ASN:HB3	5:E:162:GLU:HB3	1.68	0.74
8:H:146:LEU:HD12	8:H:188:SER:HB3	1.69	0.73
21:V:21:GLU:OE1	21:V:21:GLU:N	2.21	0.73
38:m:27:GLU:OE1	38:m:27:GLU:N	2.20	0.73
34:i:37:GLN:N	34:i:37:GLN:OE1	2.22	0.72
10:J:110:ASP:OD1	10:J:110:ASP:N	2.20	0.72
11:K:82:SER:OG	59:K:201:HOH:O	2.07	0.72
13:M:325:MET:HE2	13:M:362:ALA:HB2	1.72	0.72
16:P:127:GLU:O	16:P:224:ARG:NH2	2.23	0.71
10:J:132:ASP:OD1	59:J:201:HOH:O	2.07	0.71
34:i:27:LEU:HD22	34:i:31:GLU:HG2	1.72	0.70
1:A:68:GLU:OE1	59:A:301:HOH:O	2.10	0.70
22:W:24:MET:HE1	22:W:78:VAL:HG21	1.72	0.70
29:d:45:ASP:OD1	29:d:49:ARG:NH1	2.24	0.69
7:G:632:ARG:NH2	19:S:58:SER:O	2.25	0.69
11:K:83:ASN:OD1	59:K:202:HOH:O	2.10	0.69
13:M:72:LEU:HD23	13:M:76:MET:HE2	1.74	0.69
38:m:21:GLU:OE2	39:n:7:ALA:N	2.26	0.68
30:e:20:GLN:NE2	59:e:202:HOH:O	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:164:LEU:HD13	5:E:169:ILE:HG12	1.75	0.67
37:l:131:LYS:NZ	40:o:56:ASP:OD2	2.27	0.67
38:m:39:ARG:NH1	39:n:151:GLU:OE2	2.28	0.67
12:L:234:PRO:O	12:L:237:MET:HG2	1.95	0.67
4:D:328:ALA:HB3	7:G:126:ASP:HB2	1.77	0.67
17:Q:5:THR:OG1	17:Q:6:ARG:N	2.24	0.66
23:X:49:GLU:O	59:X:201:HOH:O	2.14	0.66
4:D:269:LEU:HB2	4:D:368:GLU:HB2	1.76	0.66
8:H:204:GLU:OE2	59:H:701:HOH:O	2.13	0.66
12:L:128:MET:HB2	12:L:251:THR:HG23	1.76	0.66
12:L:505:SER:O	12:L:508:THR:OG1	2.13	0.66
39:n:126:LYS:NZ	39:n:130:GLU:OE2	2.28	0.66
7:G:633:TYR:OH	59:G:902:HOH:O	2.14	0.66
8:H:206:GLU:OE2	59:H:702:HOH:O	2.14	0.66
12:L:174:TYR:HH	12:L:534:HIS:HE2	1.39	0.66
52:d:202:CDL:H322	52:d:202:CDL:H273	1.76	0.66
40:o:25:PRO:HG2	40:o:28:TYR:HB2	1.78	0.66
16:P:97:ARG:NH2	55:P:401:NDP:O2X	2.29	0.65
17:Q:30:ILE:HG22	17:Q:31:LYS:HE3	1.77	0.65
6:F:247:ARG:NH1	6:F:318:ASP:OD2	2.30	0.65
52:d:202:CDL:H381	52:d:202:CDL:H722	1.78	0.65
33:h:81:ASP:N	33:h:81:ASP:OD1	2.28	0.65
13:M:180:GLN:NE2	59:M:706:HOH:O	2.30	0.65
20:U:87:TYR:OH	34:i:26:GLU:OE2	2.12	0.65
13:M:73:LEU:HA	13:M:76:MET:HE3	1.77	0.65
15:O:145:ARG:NH1	15:O:147:GLN:OE1	2.30	0.65
25:Z:140:ILE:HA	45:Z:200:PC1:H153	1.79	0.65
8:H:98:MET:HG2	45:Z:200:PC1:H12	1.79	0.65
3:C:150:ARG:NH2	3:C:157:PHE:O	2.29	0.64
46:d:203:3PE:H371	46:d:203:3PE:H231	1.79	0.64
16:P:67:GLN:OE1	59:P:501:HOH:O	2.14	0.64
14:N:68:MET:HE2	14:N:68:MET:HA	1.79	0.64
7:G:283:MET:HB2	7:G:560:ILE:HB	1.79	0.64
37:l:18:GLU:N	37:l:18:GLU:OE2	2.27	0.64
4:D:419:GLY:O	59:D:502:HOH:O	2.15	0.64
52:H:602:CDL:OB3	59:H:703:HOH:O	2.14	0.64
46:M:602:3PE:H332	14:N:242:VAL:HG11	1.80	0.64
29:d:0:ACE:H1	33:h:123:PHE:HA	1.79	0.64
19:S:18:ILE:HD12	19:S:50:LEU:HD21	1.80	0.63
3:C:204:GLU:OE1	3:C:210:ARG:NH1	2.32	0.63
20:T:35:HIS:CD2	20:T:38:LYS:HG2	2.34	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:318:THR:O	59:H:704:HOH:O	2.15	0.63
16:P:10:LYS:NZ	17:Q:28:GLU:OE2	2.31	0.63
36:k:17:ASP:O	36:k:20:GLN:NE2	2.27	0.63
42:q:144:TYR:HD1	42:q:144:TYR:H	1.44	0.63
10:J:167:VAL:HG22	14:N:42:PRO:HG3	1.79	0.63
29:d:120:ARG:NH1	38:m:112:GLU:OE1	2.31	0.63
6:F:76:GLY:O	6:F:80:SER:OG	2.16	0.62
37:l:157:GLU:O	40:o:33:ARG:NH2	2.31	0.62
10:J:173:ARG:NH2	59:J:204:HOH:O	2.31	0.62
43:r:3:ALA:HA	52:r:201:CDL:HB22	1.80	0.62
37:l:30:ARG:NE	38:m:34:GLU:OE1	2.28	0.62
37:l:6:LYS:O	37:l:6:LYS:HD3	1.99	0.62
21:V:5:LYS:NZ	21:V:77:GLU:OE1	2.31	0.62
36:k:42:ASP:OD1	39:n:37:ARG:NH1	2.33	0.62
12:L:300:LYS:NZ	59:L:804:HOH:O	2.25	0.62
17:Q:21:THR:HG21	22:W:72:ILE:HD11	1.82	0.62
19:S:12:LYS:HB2	19:S:16:ARG:HH22	1.65	0.61
7:G:433:ALA:O	7:G:476:LYS:NZ	2.33	0.61
12:L:367:PRO:HD2	35:j:21:GLN:HE21	1.66	0.61
14:N:210:ILE:HG12	52:N:401:CDL:H411	1.81	0.61
10:J:103:MET:HG2	10:J:115:VAL:HG21	1.82	0.61
41:p:11:GLU:OE1	41:p:11:GLU:N	2.34	0.61
29:d:99:GLU:CD	29:d:99:GLU:H	2.08	0.61
8:H:143:GLU:OE2	59:H:705:HOH:O	2.16	0.61
12:L:87:MET:HA	12:L:87:MET:HE2	1.82	0.61
40:o:20:ARG:NH1	40:o:20:ARG:HA	2.15	0.61
4:D:188:ARG:NH1	59:D:511:HOH:O	2.33	0.60
8:H:77:MET:HE1	8:H:118:TRP:CE3	2.36	0.60
6:F:378:ARG:NH2	6:F:388:GLU:OE1	2.32	0.60
6:F:338:ASP:OD1	6:F:340:SER:OG	2.18	0.60
24:Y:16:GLU:OE1	24:Y:19:ARG:NH1	2.34	0.60
39:n:131:SER:OG	39:n:135:GLU:OE2	2.18	0.60
3:C:137:MET:HE1	3:C:153:THR:HG23	1.84	0.60
20:U:17:TYR:OH	36:k:21:TRP:NE1	2.26	0.60
14:N:174:GLN:OE1	59:N:501:HOH:O	2.15	0.60
32:g:119:GLN:N	32:g:119:GLN:OE1	2.35	0.60
12:L:13:LEU:HD21	47:i:201:LMT:H111	1.82	0.60
37:l:156:TYR:HA	40:o:35:GLU:HA	1.83	0.60
42:q:106:ARG:HB2	42:q:109:ILE:HG13	1.84	0.60
8:H:62:ARG:NH1	59:H:712:HOH:O	2.28	0.60
12:L:429:PHE:O	12:L:436:ARG:NH2	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:e:83:GLU:OE2	30:e:83:GLU:N	2.34	0.60
4:D:116:GLN:NE2	4:D:276:ASP:OD2	2.33	0.60
12:L:290:MET:O	12:L:523:SER:OG	2.20	0.60
52:K:101:CDL:H542	12:L:589:LEU:HD21	1.84	0.59
12:L:466:TYR:O	12:L:470:ASN:ND2	2.33	0.59
16:P:122:LYS:NZ	16:P:162:GLU:OE1	2.35	0.59
29:d:50:ARG:NH1	59:d:301:HOH:O	2.31	0.59
42:q:78:ASP:OD2	42:q:80:SER:OG	2.19	0.59
15:O:83:TYR:OH	54:O:402:DGT:O3'	2.09	0.59
15:O:88:SER:OG	15:O:90:ASP:OD1	2.19	0.59
16:P:271:GLU:OE1	16:P:281:ARG:NH1	2.35	0.59
12:L:567:SER:HB2	47:L:705:LMT:H12	1.85	0.59
33:h:48:GLY:O	41:p:60:TYR:OH	2.18	0.59
21:V:1:ALA:N	21:V:63:ASP:OD1	2.34	0.59
7:G:434:SER:OG	7:G:435:GLY:N	2.36	0.58
20:T:19:LEU:HD12	20:T:25:ILE:HG13	1.85	0.58
7:G:371:VAL:HG22	7:G:450:MET:HE1	1.85	0.58
52:N:401:CDL:HB32	15:O:5:PRO:HG3	1.83	0.58
7:G:484:THR:OG1	7:G:485:GLY:N	2.20	0.58
14:N:316:GLN:NE2	59:N:504:HOH:O	2.28	0.58
18:R:95:HIS:O	18:R:95:HIS:ND1	2.37	0.58
6:F:224:ASN:ND2	50:F:501:FMN:O2	2.28	0.58
29:d:63:LEU:HD23	52:d:205:CDL:HA62	1.84	0.58
25:Z:92:GLU:OE2	30:e:91:TYR:OH	2.17	0.58
2:B:44:SER:OG	8:H:51:ASP:OD1	2.20	0.58
21:V:47:THR:O	21:V:51:THR:OG1	2.13	0.58
31:f:30:ASN:OD1	31:f:33:LYS:NZ	2.37	0.58
32:g:101:GLU:HG3	32:g:107:ILE:HD11	1.85	0.58
46:L:703:3PE:H262	52:h:201:CDL:HB62	1.86	0.58
13:M:306:PRO:HA	13:M:458:LEU:HD22	1.85	0.58
15:O:141:GLN:NE2	15:O:201:ASP:OD2	2.37	0.58
31:f:48:LEU:HD22	31:f:52:GLU:HG2	1.86	0.58
4:D:259:MET:HE2	59:D:651:HOH:O	2.01	0.58
21:V:1:ALA:HB2	21:V:64:VAL:HG23	1.86	0.58
16:P:92:ILE:HD11	16:P:218:ILE:HD11	1.86	0.58
16:P:91:VAL:HG23	16:P:126:VAL:HG11	1.87	0.57
10:J:171:ILE:HG23	14:N:45:MET:HE2	1.85	0.57
11:K:37:MET:HE3	14:N:68:MET:CE	2.33	0.57
16:P:1:LEU:O	16:P:3:HIS:N	2.37	0.57
29:d:8:ARG:NH2	45:d:204:PC1:O14	2.38	0.57
4:D:335:ARG:NH2	9:I:129:ASP:OD1	2.32	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:69:SER:HA	52:H:602:CDL:H331	1.85	0.57
14:N:263:LYS:NZ	59:N:507:HOH:O	2.36	0.57
7:G:675:ASP:OD1	59:G:904:HOH:O	2.18	0.56
8:H:291:LYS:HD3	46:b:101:3PE:H122	1.85	0.56
16:P:52:GLU:HG3	16:P:54:TYR:H	1.70	0.56
6:F:71:ALA:O	59:F:601:HOH:O	2.17	0.56
19:S:19:ARG:HB2	19:S:65:TRP:HB2	1.87	0.56
12:L:514:HIS:HD2	12:L:516:PRO:HD3	1.69	0.56
15:O:113:GLU:O	15:O:117:SER:OG	2.18	0.56
33:h:115:ARG:NH2	59:h:304:HOH:O	2.38	0.56
34:i:112:THR:OG1	34:i:113:GLY:N	2.38	0.56
35:j:70:ASP:O	40:o:114:ARG:NH2	2.38	0.56
7:G:48:VAL:O	59:G:903:HOH:O	2.17	0.56
7:G:232:ASP:OD1	59:G:905:HOH:O	2.18	0.56
13:M:343:ILE:O	13:M:346:ARG:NH1	2.39	0.56
13:M:57:PHE:HB3	13:M:113:MET:HE3	1.88	0.56
38:m:22:TYR:O	38:m:24:ILE:N	2.39	0.56
8:H:68:ALA:HB1	52:H:602:CDL:HA61	1.87	0.56
7:G:366:THR:HB	7:G:450:MET:HE3	1.87	0.56
8:H:24:GLU:OE1	8:H:228:TYR:OH	2.17	0.56
16:P:177:ARG:NH2	55:P:401:NDP:O2N	2.32	0.56
35:j:60:THR:N	35:j:63:GLU:OE2	2.39	0.56
41:p:26:PRO:HB2	41:p:31:TYR:HE2	1.71	0.56
2:B:69:MET:HE1	2:B:76:PHE:CD2	2.41	0.55
12:L:539:TYR:O	12:L:543:SER:OG	2.20	0.55
43:r:90:GLU:N	43:r:90:GLU:OE1	2.39	0.55
13:M:271:MET:HE2	13:M:271:MET:HA	1.88	0.55
39:n:34:ASP:OD1	39:n:35:LYS:N	2.38	0.55
16:P:1:LEU:HD21	16:P:4:ALA:HA	1.88	0.55
11:K:56:ALA:HA	30:e:17:MET:HE3	1.87	0.55
24:Y:80:ARG:NH1	24:Y:88:ASN:OD1	2.40	0.55
8:H:77:MET:HE1	8:H:118:TRP:HE3	1.70	0.55
11:K:22:TYR:OH	59:K:203:HOH:O	2.17	0.55
3:C:111:THR:HB	3:C:117:ILE:HD11	1.88	0.55
10:J:173:ARG:NH2	59:J:207:HOH:O	2.33	0.55
20:T:48:VAL:HG12	20:T:52:MET:HE2	1.89	0.55
33:h:10:ILE:HD12	39:n:178:MET:HB3	1.87	0.55
7:G:338:VAL:HG13	7:G:609:MET:HE1	1.88	0.55
15:O:221:LEU:HD21	15:O:241:LEU:HD21	1.87	0.55
20:T:88:GLU:OE1	20:T:88:GLU:N	2.40	0.55
24:Y:140:VAL:O	33:h:115:ARG:NH1	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Z:96:VAL:HG11	30:e:82:ARG:HG3	1.88	0.55
28:c:27:LEU:HD11	52:d:205:CDL:H761	1.88	0.55
7:G:558:ASP:OD1	42:q:144:TYR:OH	2.19	0.54
7:G:6:SER:OG	7:G:7:ASN:N	2.39	0.54
7:G:21:GLU:CD	7:G:21:GLU:H	2.15	0.54
20:T:28:GLU:OE1	20:T:29:LYS:HG3	2.08	0.54
40:o:28:TYR:OH	40:o:110:ARG:NH2	2.41	0.54
59:K:210:HOH:O	14:N:68:MET:HE3	2.06	0.54
13:M:141:GLU:H	13:M:141:GLU:CD	2.14	0.54
4:D:62:LEU:HB2	4:D:425:PHE:CZ	2.43	0.54
8:H:169:GLN:O	46:H:601:3PE:N	2.33	0.54
10:J:81:GLU:OE1	59:J:202:HOH:O	2.18	0.54
21:V:110:GLN:NE2	59:V:201:HOH:O	2.41	0.54
45:B:203:PC1:O12	59:B:301:HOH:O	2.18	0.54
7:G:297:GLU:HG3	22:W:122:TYR:CZ	2.42	0.54
7:G:690:ALA:HB2	7:G:698:VAL:HG21	1.90	0.54
7:G:703:ILE:HG13	7:G:704:CYS:SG	2.48	0.54
32:g:120:LEU:HD11	41:p:162:MET:HB3	1.90	0.54
37:l:129:GLY:O	40:o:97:ARG:NH1	2.31	0.54
7:G:338:VAL:CG1	7:G:609:MET:HE1	2.37	0.54
52:H:602:CDL:OB4	59:H:706:HOH:O	2.19	0.54
10:J:5:ILE:HG21	25:Z:141:TRP:HZ2	1.72	0.54
10:J:92:ALA:HB1	52:K:101:CDL:H331	1.90	0.54
20:U:39:ASP:OD1	20:U:39:ASP:N	2.41	0.54
40:o:116:GLN:HA	40:o:116:GLN:OE1	2.08	0.54
42:q:68:MET:SD	42:q:81:MET:HG2	2.48	0.54
12:L:284:THR:O	12:L:288:THR:OG1	2.22	0.54
23:X:74:LYS:NZ	26:a:69:ILE:O	2.40	0.54
1:A:32:GLU:OE1	2:B:102:LYS:NZ	2.40	0.54
2:B:173:LEU:HD22	45:B:203:PC1:H232	1.89	0.54
4:D:117:ALA:HB2	4:D:367:ILE:HG12	1.89	0.54
12:L:514:HIS:CD2	12:L:516:PRO:HD3	2.42	0.54
14:N:211:MET:HG2	14:N:333:SER:HB2	1.89	0.54
15:O:111:ALA:HB1	15:O:122:VAL:HG21	1.89	0.54
8:H:104:PHE:HE1	45:Z:200:PC1:H341	1.73	0.53
15:O:53:GLU:OE2	15:O:126:ARG:NH1	2.39	0.53
4:D:112:MET:HG3	4:D:181:TYR:CZ	2.44	0.53
5:E:53:LEU:HD13	44:s:52:LEU:HD12	1.90	0.53
7:G:139:ASP:O	18:R:77:LYS:NZ	2.41	0.53
8:H:24:GLU:HA	8:H:271:LEU:HD13	1.90	0.53
10:J:38:GLY:HA3	45:Z:200:PC1:H2F2	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:199:GLN:HB2	41:p:110:LYS:HG2	1.89	0.53
46:M:602:3PE:H2I1	14:N:257:LEU:HD21	1.90	0.53
14:N:307:SER:OG	14:N:308:THR:N	2.41	0.53
22:W:19:ILE:HG13	22:W:76:ARG:HG2	1.90	0.53
37:l:127:PRO:HD3	40:o:3:HIS:CE1	2.43	0.53
38:m:36:LEU:O	38:m:40:SER:OG	2.20	0.53
47:A:204:LMT:O2'	27:b:33:THR:HG22	2.08	0.53
8:H:172:MET:HE3	8:H:177:PRO:HD3	1.89	0.53
7:G:6:SER:OG	7:G:7:ASN:OD1	2.27	0.53
10:J:76:THR:OG1	59:J:203:HOH:O	2.19	0.53
33:h:44:ASN:HB3	52:h:201:CDL:HB32	1.91	0.53
39:n:134:ARG:NH2	39:n:160:GLY:O	2.41	0.53
4:D:321:GLY:O	25:Z:7:GLN:NE2	2.39	0.53
13:M:281:ASP:HB3	13:M:284:SER:HB3	1.90	0.53
14:N:347:GLU:O	29:d:8:ARG:NH2	2.42	0.53
42:q:144:TYR:CG	42:q:145:LYS:N	2.76	0.53
1:A:68:GLU:HG2	10:J:161:LEU:HD13	1.90	0.53
7:G:147:LYS:HB2	7:G:211:LYS:HG2	1.91	0.53
34:i:31:GLU:HB3	34:i:32:PRO:HD3	1.91	0.53
12:L:221:THR:HG23	12:L:226:GLN:HB2	1.90	0.53
23:X:8:SER:OG	23:X:11:ASP:OD2	2.26	0.53
32:g:115:PRO:HB3	41:p:162:MET:HE3	1.91	0.53
43:r:11:ARG:HG3	43:r:19:LEU:HD12	1.90	0.53
13:M:203:PHE:O	13:M:207:MET:HG2	2.10	0.52
34:i:103:ILE:HB	40:o:47:ASP:HB3	1.89	0.52
4:D:51:PHE:HB3	4:D:64:LEU:HB3	1.91	0.52
6:F:95:VAL:HG11	6:F:118:LEU:HD11	1.91	0.52
14:N:46:LYS:NZ	52:N:401:CDL:HA22	2.23	0.52
8:H:195:ARG:HD3	8:H:231:ILE:HD11	1.90	0.52
5:E:27:ASN:OD1	5:E:30:ARG:NH1	2.40	0.52
19:S:83:ALA:O	19:S:87:THR:OG1	2.26	0.52
20:T:6:LEU:HB2	20:T:86:VAL:HG21	1.92	0.52
34:i:89:VAL:O	34:i:95:THR:OG1	2.18	0.52
39:n:133:GLU:CD	39:n:133:GLU:H	2.16	0.52
7:G:252:PRO:HG3	7:G:263:ILE:HG12	1.91	0.52
47:A:204:LMT:H6'1	27:b:42:LEU:HB2	1.90	0.52
8:H:24:GLU:HG3	8:H:271:LEU:HD22	1.92	0.52
26:a:35:GLU:O	59:a:101:HOH:O	2.19	0.52
2:B:39:TRP:CE2	45:B:202:PC1:H321	2.44	0.52
4:D:73:VAL:HG21	4:D:414:VAL:HG21	1.91	0.52
4:D:6:PRO:HB3	4:D:10:TRP:CD1	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:315:VAL:O	7:G:340:SER:OG	2.28	0.52
12:L:22:MET:HA	12:L:27:TYR:HE1	1.75	0.52
13:M:433:GLU:O	13:M:437:MET:HG2	2.10	0.52
5:E:87:TYR:HB3	6:F:181:ALA:O	2.10	0.51
6:F:306:LEU:HD23	6:F:347:ILE:HD11	1.93	0.51
7:G:536:ASP:OD1	7:G:536:ASP:N	2.42	0.51
36:k:41:ARG:HB2	36:k:41:ARG:NH1	2.25	0.51
6:F:99:GLU:O	6:F:139:ARG:NH1	2.42	0.51
6:F:327:THR:OG1	6:F:328:GLY:N	2.35	0.51
7:G:667:THR:HG22	7:G:669:LYS:H	1.75	0.51
13:M:243:MET:HB3	13:M:301:ILE:HG21	1.92	0.51
16:P:94:LEU:HD23	16:P:132:ILE:HG13	1.92	0.51
24:Y:81:GLU:OE1	24:Y:81:GLU:N	2.44	0.51
35:j:61:ASP:HB3	35:j:66:ILE:HB	1.93	0.51
13:M:165:ILE:HG21	14:N:268:GLN:HA	1.92	0.51
4:D:140:LEU:HA	59:D:659:HOH:O	2.10	0.51
12:L:564:LYS:NZ	47:L:704:LMT:H4B	2.25	0.51
14:N:88:LYS:NZ	30:e:52:GLU:OE2	2.44	0.51
37:l:54:SER:HA	37:l:84:TYR:HB3	1.92	0.51
38:m:90:ALA:HA	38:m:94:ILE:HD12	1.93	0.51
11:K:42:VAL:O	11:K:46:LEU:HG	2.11	0.51
15:O:315:LYS:HD2	15:O:316:TRP:H	1.75	0.51
13:M:379:LEU:O	13:M:383:MET:HG2	2.11	0.51
16:P:96:GLY:O	55:P:401:NDP:H8A	2.11	0.51
16:P:287:ILE:HD11	59:P:557:HOH:O	2.11	0.51
35:j:56:PRO:HA	35:j:59:TRP:CE3	2.46	0.51
7:G:382:THR:HB	7:G:454:GLY:HA3	1.92	0.51
46:M:602:3PE:H362	46:d:201:3PE:H381	1.92	0.51
14:N:19:ILE:O	14:N:23:SER:OG	2.17	0.51
20:U:47:GLN:NE2	20:U:70:LEU:O	2.43	0.50
11:K:93:LEU:HB3	14:N:54:GLU:HG3	1.92	0.50
20:T:69:LYS:O	20:T:71:MET:N	2.44	0.50
32:g:109:GLU:O	41:p:141:ARG:HD3	2.11	0.50
39:n:107:HIS:CD2	39:n:108:PRO:HD2	2.47	0.50
40:o:20:ARG:HA	40:o:20:ARG:HH11	1.76	0.50
2:B:91:THR:HA	2:B:119:CYS:HB3	1.93	0.50
5:E:4:GLY:N	5:E:93:LYS:HZ2	2.10	0.50
12:L:358:LYS:NZ	59:L:808:HOH:O	2.34	0.50
19:S:12:LYS:HB2	19:S:16:ARG:NH2	2.26	0.50
29:d:0:ACE:H3	33:h:125:TYR:HE1	1.76	0.50
7:G:174:THR:HG21	7:G:181:MET:HE3	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:g:114:ASP:HB3	32:g:117:LYS:HG3	1.93	0.50
8:H:209:SER:HB3	8:H:213:VAL:HA	1.94	0.50
34:i:31:GLU:O	34:i:33:VAL:N	2.45	0.50
9:I:53:GLU:OE2	42:q:34:ARG:NH2	2.45	0.50
10:J:124:ASP:OD2	11:K:4:VAL:HB	2.11	0.50
45:M:604:PC1:H122	47:M:605:LMT:H2'	1.93	0.50
24:Y:61:THR:OG1	24:Y:103:ARG:NH1	2.45	0.50
25:Z:124:TYR:HB3	25:Z:132:VAL:HG22	1.92	0.50
12:L:17:MET:HE3	47:i:201:LMT:H82	1.93	0.50
7:G:324:ASP:CB	7:G:571:ALA:HB1	2.41	0.50
40:o:82:GLU:OE1	40:o:82:GLU:N	2.40	0.50
13:M:16:TRP:CE2	46:d:201:3PE:H271	2.47	0.50
2:B:138:ARG:NH1	59:B:309:HOH:O	2.40	0.49
12:L:503:GLU:O	12:L:507:MET:HG3	2.12	0.49
15:O:135:LEU:HD22	15:O:152:TYR:CD1	2.47	0.49
2:B:52:LEU:HB2	2:B:90:GLY:HA3	1.94	0.49
12:L:477:ILE:HD11	40:o:54:GLN:HA	1.94	0.49
5:E:101:GLN:HG2	5:E:140:ILE:HD11	1.93	0.49
16:P:222:ASP:O	16:P:226:LYS:HD2	2.12	0.49
5:E:165:THR:H	5:E:168:ASP:HB2	1.78	0.49
6:F:243:ALA:HA	6:F:251:SER:HB3	1.94	0.49
7:G:266:LYS:HE2	7:G:671:PHE:O	2.12	0.49
7:G:366:THR:O	7:G:367:THR:OG1	2.29	0.49
12:L:566:ILE:O	12:L:570:GLN:HG2	2.12	0.49
13:M:74:PRO:O	13:M:78:MET:HG3	2.12	0.49
14:N:265:MET:HE1	23:X:167:PHE:HE2	1.78	0.49
3:C:165:ASP:HA	17:Q:82:LEU:HD11	1.94	0.49
7:G:595:GLU:HB3	7:G:598:LYS:HG3	1.93	0.49
14:N:30:TRP:O	14:N:34:GLU:HG2	2.12	0.49
20:U:69:LYS:HA	34:i:2:GLY:HA2	1.95	0.49
37:l:18:GLU:H	37:l:18:GLU:CD	2.21	0.49
6:F:154:ARG:O	6:F:158:GLU:HG3	2.12	0.49
6:F:193:ILE:HG23	6:F:215:VAL:HA	1.93	0.49
15:O:108:TYR:OH	15:O:164:LEU:O	2.28	0.49
6:F:302:SER:HB2	6:F:350:LEU:HD22	1.94	0.49
8:H:189:THR:HG22	8:H:234:MET:HE3	1.95	0.49
13:M:44:GLN:O	59:M:701:HOH:O	2.20	0.49
34:i:120:LYS:HG2	40:o:39:VAL:HG13	1.94	0.49
37:l:6:LYS:HA	37:l:9:LEU:HD12	1.94	0.49
41:p:45:THR:O	41:p:49:GLU:HG2	2.12	0.49
10:J:172:THR:HA	11:K:80:MET:SD	2.53	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:d:54:LEU:HD21	46:d:201:3PE:H232	1.95	0.49
34:i:104:PHE:HD2	40:o:70:ARG:HH21	1.61	0.49
45:M:603:PC1:H112	45:M:603:PC1:H143	1.61	0.49
20:U:25:ILE:HD13	20:U:40:LEU:HD22	1.95	0.49
32:g:35:GLU:OE1	32:g:35:GLU:N	2.44	0.49
36:k:48:GLU:OE2	39:n:33:ARG:NH2	2.43	0.49
1:A:33:LYS:HD3	8:H:61:LEU:HD21	1.95	0.48
7:G:481:SER:OG	7:G:483:VAL:HG23	2.13	0.48
14:N:250:SER:O	14:N:259:GLY:HA3	2.12	0.48
14:N:336:MET:HE1	52:d:205:CDL:H473	1.95	0.48
24:Y:105:ARG:HD2	24:Y:105:ARG:HA	1.60	0.48
29:d:109:TYR:HB2	41:p:73:ILE:O	2.13	0.48
42:q:4:LEU:HD12	42:q:8:LYS:NZ	2.28	0.48
2:B:176:TRP:HA	2:B:179:ARG:HD2	1.95	0.48
13:M:17:LEU:HD13	31:f:11:TRP:HH2	1.77	0.48
32:g:94:GLU:HG2	41:p:8:VAL:HG11	1.94	0.48
42:q:144:TYR:CZ	42:q:145:LYS:HG2	2.47	0.48
7:G:337:ARG:HB3	7:G:609:MET:HE2	1.94	0.48
16:P:26:ALA:HB3	16:P:47:VAL:HG13	1.95	0.48
22:W:34:LEU:HD13	22:W:86:LYS:HG3	1.95	0.48
32:g:25:ARG:O	32:g:25:ARG:NE	2.46	0.48
37:l:10:PRO:HD3	38:m:66:ARG:HG2	1.94	0.48
38:m:121:ASP:OD1	38:m:123:THR:OG1	2.25	0.48
4:D:300:ARG:NH1	59:D:517:HOH:O	2.40	0.48
6:F:166:ALA:O	6:F:169:SER:OG	2.30	0.48
7:G:461:ASN:O	59:G:906:HOH:O	2.20	0.48
14:N:206:ILE:HD11	45:d:204:PC1:H351	1.95	0.48
23:X:6:LEU:HD12	25:Z:90:LEU:HD22	1.96	0.48
6:F:115:PRO:O	6:F:119:VAL:HG23	2.13	0.48
42:q:136:GLU:OE1	42:q:136:GLU:N	2.45	0.48
11:K:13:THR:HG22	52:K:101:CDL:H422	1.95	0.48
12:L:562:LEU:HD13	47:L:704:LMT:H92	1.95	0.48
14:N:133:TRP:HE3	52:N:401:CDL:H201	1.77	0.48
26:a:4:GLU:OE2	59:a:102:HOH:O	2.20	0.48
38:m:86:SER:HB2	46:m:201:3PE:H321	1.95	0.48
9:I:95:GLU:HB2	9:I:108:ARG:HB3	1.95	0.48
10:J:132:ASP:HB2	59:J:233:HOH:O	2.13	0.48
16:P:97:ARG:HA	16:P:97:ARG:HD3	1.62	0.48
16:P:319:ARG:HA	16:P:322:ARG:HD2	1.95	0.48
37:l:68:ASP:OD1	37:l:68:ASP:N	2.47	0.48
40:o:30:PHE:HD2	40:o:33:ARG:HG2	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:K:101:CDL:H541	24:Y:40:VAL:HG12	1.96	0.48
37:l:82:ASP:OD1	37:l:82:ASP:N	2.47	0.48
37:l:131:LYS:HA	40:o:97:ARG:HD3	1.95	0.48
6:F:277:LYS:O	6:F:281:GLU:HG2	2.13	0.47
15:O:310:GLU:HG3	15:O:317:ILE:HD12	1.96	0.47
23:X:60:LYS:O	23:X:64:GLN:HG2	2.14	0.47
44:s:63:MET:HE3	44:s:64:PRO:HD2	1.95	0.47
20:T:75:GLU:OE1	20:T:75:GLU:N	2.38	0.47
12:L:10:VAL:HG21	34:i:78:VAL:HG23	1.96	0.47
16:P:170:GLU:HG3	16:P:178:PHE:CZ	2.49	0.47
35:j:70:ASP:OD1	35:j:71:GLU:N	2.47	0.47
39:n:175:GLU:HG2	39:n:176:ARG:HG2	1.96	0.47
40:o:16:PRO:HD3	40:o:105:ARG:HG3	1.96	0.47
44:s:63:MET:HE3	44:s:63:MET:HB3	1.74	0.47
10:J:153:LEU:O	10:J:157:THR:HG23	2.13	0.47
13:M:247:THR:HB	13:M:304:GLN:HE21	1.78	0.47
42:q:55:PHE:CD2	43:r:25:LEU:HD13	2.50	0.47
5:E:159:ASN:HB3	5:E:184:PRO:HB3	1.95	0.47
7:G:165:GLU:OE2	59:G:908:HOH:O	2.21	0.47
14:N:146:PHE:CD2	14:N:147:PRO:HD3	2.49	0.47
4:D:275:TYR:OH	59:D:501:HOH:O	2.14	0.47
6:F:111:ILE:HD13	6:F:138:ILE:HD12	1.95	0.47
7:G:215:PHE:CG	9:I:104:ARG:HG3	2.48	0.47
16:P:26:ALA:HA	16:P:31:GLY:HA3	1.96	0.47
27:b:23:ALA:HB2	46:b:101:3PE:H3C1	1.96	0.47
52:d:205:CDL:H742	52:d:205:CDL:H712	1.62	0.47
35:j:61:ASP:N	35:j:61:ASP:OD1	2.48	0.47
13:M:452:LYS:HE3	32:g:83:TYR:HB3	1.97	0.47
20:U:83:LYS:HA	20:U:83:LYS:HD3	1.58	0.47
33:h:142:ASP:O	59:h:301:HOH:O	2.20	0.47
2:B:71:ARG:HA	8:H:37:PRO:HA	1.97	0.47
4:D:422:ASP:OD2	59:D:503:HOH:O	2.21	0.47
6:F:367:GLU:OE1	7:G:100:ASN:ND2	2.43	0.47
16:P:59:LEU:O	16:P:62:MET:HB2	2.15	0.47
16:P:178:PHE:HA	59:P:557:HOH:O	2.14	0.47
46:d:201:3PE:H332	46:d:201:3PE:H362	1.57	0.47
35:j:65:GLY:HA3	40:o:30:PHE:CE1	2.50	0.47
38:m:4:LYS:HB3	38:m:4:LYS:HE3	1.71	0.47
4:D:417:ILE:O	4:D:420:THR:HG22	2.15	0.47
12:L:401:THR:OG1	12:L:479:GLN:HG2	2.14	0.47
32:g:94:GLU:OE2	41:p:9:TYR:OH	2.19	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:105:THR:HG22	5:E:106:THR:H	1.80	0.46
6:F:276:LEU:O	6:F:280:ILE:HG13	2.15	0.46
8:H:206:GLU:HB3	59:H:728:HOH:O	2.15	0.46
12:L:173:LEU:HD12	13:M:405:LEU:HD21	1.98	0.46
13:M:403:THR:HA	13:M:406:TYR:CE2	2.49	0.46
46:M:602:3PE:H2I1	46:M:602:3PE:H3C1	1.97	0.46
14:N:54:GLU:OE2	14:N:58:LYS:NZ	2.37	0.46
15:O:58:TYR:O	15:O:61:SER:OG	2.33	0.46
19:S:87:THR:O	19:S:91:GLU:HG2	2.15	0.46
33:h:142:ASP:OD2	59:h:302:HOH:O	2.21	0.46
37:l:50:LEU:HD12	37:l:78:HIS:HA	1.96	0.46
16:P:130:ILE:HD13	16:P:164:THR:HB	1.97	0.46
29:d:1:MET:HG3	29:d:2:MET:HB2	1.97	0.46
41:p:6:LYS:HB2	41:p:6:LYS:HE2	1.73	0.46
4:D:209:ASP:O	4:D:213:GLU:HG2	2.16	0.46
13:M:108:MET:HE3	13:M:121:LEU:HD22	1.98	0.46
13:M:115:LEU:HB2	13:M:174:LEU:HB3	1.97	0.46
15:O:74:SER:OG	59:O:501:HOH:O	2.21	0.46
46:d:201:3PE:H251	46:d:201:3PE:H222	1.71	0.46
37:l:85:ILE:HD12	37:l:87:ASN:HB2	1.97	0.46
37:l:148:LYS:NZ	37:l:148:LYS:HB3	2.30	0.46
7:G:262:TRP:HB2	7:G:390:LEU:HD11	1.97	0.46
7:G:377:VAL:HG23	7:G:404:LEU:HD11	1.96	0.46
7:G:477:ILE:HD11	7:G:489:VAL:HG11	1.97	0.46
10:J:43:ILE:HG22	11:K:46:LEU:HD21	1.97	0.46
12:L:22:MET:HA	12:L:27:TYR:CE1	2.50	0.46
15:O:50:HIS:NE2	15:O:125:GLU:OE2	2.47	0.46
19:S:68:TYR:HE2	19:S:74:LYS:HG3	1.81	0.46
32:g:93:ALA:HB1	41:p:101:ILE:HG13	1.96	0.46
12:L:140:LEU:HD12	59:L:848:HOH:O	2.16	0.46
13:M:78:MET:HE2	32:g:61:VAL:HG22	1.98	0.46
16:P:271:GLU:HG3	16:P:280:THR:HG22	1.96	0.46
2:B:70:ASP:OD2	59:B:303:HOH:O	2.21	0.46
16:P:145:TYR:CD1	16:P:286:ARG:HD3	2.50	0.46
35:j:11:TYR:O	35:j:13:GLN:HG3	2.15	0.46
41:p:14:ARG:CZ	41:p:14:ARG:HB3	2.46	0.46
3:C:168:LEU:HD11	4:D:90:LEU:HD23	1.98	0.46
4:D:47:LEU:HD21	8:H:126:LYS:HD3	1.98	0.46
10:J:133:SER:O	10:J:133:SER:OG	2.30	0.46
45:M:604:PC1:H3B1	45:M:604:PC1:H382	1.59	0.46
45:M:604:PC1:H12	47:M:606:LMT:H2'	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:e:7:LYS:HB2	30:e:7:LYS:HE2	1.63	0.46
32:g:33:GLU:OE2	32:g:33:GLU:HA	2.16	0.46
11:K:34:GLU:OE1	59:K:204:HOH:O	2.20	0.46
5:E:82:GLU:HG2	7:G:174:THR:O	2.15	0.46
7:G:276:ARG:NH2	7:G:277:GLN:HE21	2.13	0.46
7:G:316:ALA:HB3	7:G:519:PRO:HG3	1.97	0.46
7:G:382:THR:HG23	7:G:384:PRO:HD3	1.98	0.46
14:N:332:LEU:O	14:N:336:MET:HG2	2.16	0.46
40:o:73:PHE:CD1	40:o:74:PRO:HA	2.51	0.46
45:B:203:PC1:H112	45:B:203:PC1:H153	1.74	0.46
6:F:353:PHE:O	6:F:357:GLU:HG2	2.15	0.46
12:L:13:LEU:HD23	34:i:77:PRO:HB3	1.97	0.46
12:L:297:ASP:HB3	12:L:300:LYS:HB2	1.97	0.46
20:U:36:PHE:HA	20:U:40:LEU:HD12	1.98	0.46
26:a:49:GLU:OE1	26:a:52:ARG:NH2	2.49	0.46
5:E:156:ILE:HB	5:E:161:TYR:HE2	1.81	0.45
10:J:125:TRP:HB2	25:Z:136:THR:HG21	1.97	0.45
13:M:94:LEU:HD22	46:M:602:3PE:H2A1	1.98	0.45
13:M:104:LEU:HG	13:M:108:MET:HE2	1.97	0.45
13:M:243:MET:HA	13:M:246:ILE:HG22	1.98	0.45
42:q:71:LYS:HD3	42:q:73:THR:HG22	1.98	0.45
1:A:51:PHE:CD2	8:H:133:LEU:HD13	2.51	0.45
12:L:49:ILE:HB	12:L:50:PRO:HD3	1.98	0.45
17:Q:9:GLN:HG3	22:W:22:ARG:NH2	2.31	0.45
52:h:201:CDL:H592	34:i:79:TRP:CE3	2.51	0.45
35:j:67:PRO:HG2	40:o:110:ARG:NE	2.31	0.45
13:M:201:MET:HG3	46:M:601:3PE:H2F2	1.97	0.45
21:V:71:LEU:HD13	21:V:79:VAL:HG11	1.97	0.45
10:J:1:FME:HE3	10:J:1:FME:HB3	1.90	0.45
20:U:72:CYS:SG	20:U:75:GLU:HG2	2.56	0.45
24:Y:104:THR:HG22	24:Y:106:SER:HB3	1.98	0.45
4:D:107:ASP:OD2	4:D:110:SER:OG	2.24	0.45
10:J:56:VAL:HG23	11:K:64:LEU:HD21	1.99	0.45
12:L:99:SER:OG	59:L:802:HOH:O	2.21	0.45
13:M:233:ALA:HA	13:M:320:GLY:HA2	1.98	0.45
13:M:438:SER:HA	13:M:441:ILE:HG22	1.98	0.45
46:M:601:3PE:H282	46:M:601:3PE:H251	1.43	0.45
16:P:76:ARG:NH2	16:P:108:ASP:OD2	2.50	0.45
18:R:1:GLY:N	18:R:42:ASP:OD2	2.40	0.45
19:S:15:LEU:H	19:S:97:LYS:HD2	1.82	0.45
40:o:51:VAL:HB	40:o:54:GLN:HG3	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:A:201:PC1:H143	45:A:201:PC1:H112	1.69	0.45
2:B:90:GLY:HA2	48:B:201:SF4:S2	2.57	0.45
7:G:155:GLN:NE2	59:G:923:HOH:O	2.50	0.45
7:G:284:VAL:HG12	7:G:559:VAL:HG22	1.98	0.45
7:G:528:ASP:OD2	7:G:545:TYR:OH	2.28	0.45
12:L:304:PHE:CZ	12:L:526:LEU:HD22	2.51	0.45
46:M:601:3PE:H3A2	47:Y:202:LMT:H112	1.99	0.45
20:U:64:ASP:N	20:U:64:ASP:OD1	2.48	0.45
46:d:201:3PE:H3A1	46:d:201:3PE:H3D1	1.67	0.45
41:p:121:ARG:HG3	41:p:121:ARG:O	2.17	0.45
4:D:305:ARG:HD3	25:Z:20:TYR:O	2.16	0.45
8:H:233:MET:HE3	8:H:233:MET:HB3	1.74	0.45
12:L:370:THR:HG23	12:L:431:LEU:HD13	1.97	0.45
25:Z:141:TRP:CD1	45:Z:200:PC1:H252	2.52	0.45
26:a:1:MET:HE3	26:a:1:MET:HA	1.99	0.45
45:A:203:PC1:H322	45:A:203:PC1:H31	1.78	0.45
5:E:121:GLN:HB2	5:E:126:ILE:O	2.16	0.45
9:I:92:ILE:HG12	9:I:111:ILE:HG12	1.99	0.45
47:M:606:LMT:H62	38:m:101:TYR:CD1	2.51	0.45
16:P:74:ASN:HB3	16:P:77:ASP:HB3	1.99	0.45
21:V:34:LEU:HD13	21:V:48:GLU:HG3	1.99	0.45
1:A:67:LEU:HD22	10:J:59:ILE:HD12	1.98	0.45
11:K:27:MET:HE2	11:K:27:MET:HB2	1.88	0.45
46:L:703:3PE:H282	52:h:201:CDL:H321	1.99	0.45
46:L:706:3PE:O14	24:Y:39:SER:OG	2.31	0.45
45:d:204:PC1:H392	45:d:204:PC1:H361	1.47	0.45
35:j:65:GLY:HA3	40:o:30:PHE:CD1	2.52	0.45
9:I:27:TRP:HB3	9:I:30:LEU:HD12	2.00	0.44
20:T:43:ASP:OD1	20:T:43:ASP:N	2.50	0.44
52:h:201:CDL:H621	41:p:43:PRO:HB2	1.98	0.44
41:p:130:GLN:O	41:p:134:VAL:HG23	2.17	0.44
1:A:44:MET:HG2	22:W:95:VAL:HB	1.99	0.44
47:A:204:LMT:C6B	27:b:42:LEU:HB2	2.48	0.44
2:B:54:CYS:HB3	4:D:108:TYR:HB2	1.99	0.44
5:E:144:CYS:SG	6:F:102:PRO:HA	2.57	0.44
6:F:142:PHE:HB3	6:F:145:GLU:HB2	1.99	0.44
8:H:228:TYR:HA	8:H:231:ILE:HD12	1.99	0.44
12:L:42:TYR:HE2	34:i:70:ALA:HB2	1.83	0.44
12:L:286:LEU:HD13	12:L:411:MET:SD	2.57	0.44
13:M:46:GLY:HA3	32:g:85:MET:HG2	1.98	0.44
47:M:606:LMT:H81	47:M:606:LMT:H111	1.58	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:277:ILE:HD13	47:Y:202:LMT:H51	1.99	0.44
14:N:289:ASN:HA	14:N:292:PHE:CE2	2.53	0.44
18:R:37:GLU:OE1	18:R:37:GLU:HA	2.17	0.44
22:W:91:GLU:HB3	22:W:97:LYS:HE2	1.98	0.44
24:Y:24:THR:OG1	24:Y:66:GLY:O	2.27	0.44
36:k:89:SER:O	36:k:91:LYS:NZ	2.50	0.44
39:n:139:LEU:O	39:n:143:THR:OG1	2.22	0.44
3:C:205:ALA:HA	7:G:122:MET:SD	2.57	0.44
7:G:349:PHE:H	7:G:509:PRO:HB2	1.83	0.44
10:J:17:PHE:HA	10:J:20:PHE:CE2	2.51	0.44
10:J:39:VAL:HG13	45:Z:200:PC1:H2F1	1.99	0.44
13:M:87:GLU:OE1	13:M:91:ARG:HB2	2.17	0.44
27:b:7:PHE:O	27:b:11:VAL:HG22	2.16	0.44
35:j:10:ARG:NH2	35:j:16:GLN:HB2	2.32	0.44
12:L:17:MET:O	12:L:21:MET:HG2	2.17	0.44
15:O:138:MET:HE2	54:O:402:DGT:HN2	1.82	0.44
16:P:202:LYS:HA	16:P:202:LYS:HD2	1.89	0.44
8:H:93:TYR:OH	26:a:35:GLU:OE2	2.26	0.44
8:H:150:LEU:O	8:H:154:LEU:HG	2.16	0.44
15:O:180:GLN:O	15:O:184:GLN:HG2	2.17	0.44
35:j:71:GLU:C	40:o:110:ARG:HH21	2.25	0.44
1:A:23:TRP:CH2	45:A:201:PC1:H142	2.52	0.44
7:G:10:GLU:HB2	7:G:19:MET:SD	2.57	0.44
7:G:333:ASP:O	7:G:337:ARG:HG2	2.17	0.44
7:G:424:ASP:OD1	7:G:424:ASP:N	2.50	0.44
8:H:187:ILE:HD12	46:I:201:3PE:H262	1.98	0.44
11:K:19:LEU:HD22	11:K:36:MET:HE1	1.99	0.44
12:L:36:VAL:O	12:L:40:ILE:HG12	2.18	0.44
13:M:207:MET:HE3	13:M:207:MET:HB3	1.82	0.44
14:N:115:VAL:O	14:N:119:THR:OG1	2.32	0.44
16:P:170:GLU:HG3	16:P:178:PHE:CE1	2.53	0.44
17:Q:7:ASP:OD1	17:Q:7:ASP:N	2.50	0.44
34:i:87:TYR:CZ	41:p:48:ARG:HG2	2.52	0.44
11:K:57:SER:OG	59:K:205:HOH:O	2.21	0.44
12:L:544:MET:HE3	12:L:544:MET:HB3	1.91	0.44
14:N:66:ALA:HB2	14:N:104:MET:HE2	2.00	0.44
52:h:201:CDL:H621	52:h:201:CDL:H591	1.68	0.44
35:j:62:GLU:C	35:j:62:GLU:OE1	2.61	0.44
4:D:354:GLU:HG2	4:D:355:GLY:O	2.18	0.44
12:L:144:TRP:CE2	12:L:223:LYS:HE2	2.52	0.44
34:i:17:LEU:HD11	39:n:162:LEU:HD22	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:164:GLU:HG3	42:q:88:ARG:HD3	1.99	0.44
46:L:703:3PE:H331	46:L:703:3PE:H361	1.54	0.44
15:O:88:SER:OG	15:O:89:ASN:N	2.51	0.44
15:O:279:LEU:HB3	15:O:282:VAL:HG22	1.99	0.44
40:o:95:VAL:HA	40:o:98:MET:HB2	2.00	0.44
7:G:148:THR:HB	7:G:150:MET:SD	2.57	0.43
7:G:364:LEU:HD12	7:G:491:ASN:HB3	2.00	0.43
9:I:99:ARG:HD3	9:I:105:ARG:HG3	2.00	0.43
12:L:63:ILE:O	12:L:79:SER:HA	2.18	0.43
13:M:8:THR:HG21	13:M:103:GLN:HG2	2.00	0.43
13:M:191:SER:HB2	46:M:601:3PE:H31	1.99	0.43
14:N:87:MET:O	14:N:145:ILE:HG22	2.18	0.43
15:O:22:SER:OG	15:O:119:GLY:O	2.22	0.43
34:i:31:GLU:HG3	39:n:114:TYR:HD1	1.82	0.43
5:E:37:ASN:O	6:F:135:TYR:OH	2.25	0.43
12:L:174:TYR:CD2	12:L:232:TRP:HB3	2.54	0.43
16:P:174:ARG:NH1	59:P:504:HOH:O	2.37	0.43
40:o:45:MET:HE2	40:o:55:ARG:HA	2.00	0.43
6:F:361:GLN:O	7:G:51:ASN:HB2	2.18	0.43
6:F:403:THR:HB	48:F:502:SF4:S4	2.58	0.43
8:H:312:SER:HB3	25:Z:54:ARG:HH21	1.84	0.43
16:P:287:ILE:HD13	16:P:287:ILE:HA	1.90	0.43
19:S:95:SER:OG	19:S:96:SER:N	2.51	0.43
42:q:53:LYS:HA	42:q:53:LYS:HD3	1.66	0.43
6:F:20:ARG:NH1	6:F:269:GLU:O	2.52	0.43
29:d:33:PHE:HB2	52:d:202:CDL:H331	2.01	0.43
12:L:248:HIS:NE2	59:L:811:HOH:O	2.35	0.43
14:N:67:SER:OG	59:N:503:HOH:O	2.21	0.43
15:O:180:GLN:OE1	15:O:196:SER:OG	2.21	0.43
16:P:338:LYS:HB2	16:P:338:LYS:HE2	1.69	0.43
18:R:80:LYS:HB3	18:R:80:LYS:HE3	1.56	0.43
25:Z:139:PHE:CZ	45:Z:200:PC1:H151	2.53	0.43
4:D:17:ALA:HB1	11:K:98:CYS:SG	2.58	0.43
5:E:85:THR:HG23	59:E:405:HOH:O	2.18	0.43
7:G:180:ASP:OD1	59:G:907:HOH:O	2.20	0.43
15:O:250:ASP:OD1	15:O:250:ASP:N	2.49	0.43
16:P:1:LEU:HD13	16:P:89:SER:HB3	1.99	0.43
16:P:183:ALA:O	16:P:186:ARG:NH1	2.52	0.43
21:V:1:ALA:N	21:V:64:VAL:H	2.16	0.43
5:E:109:MET:HE3	5:E:109:MET:HB3	1.80	0.43
45:B:202:PC1:H132	45:B:202:PC1:H111	1.76	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:54:LYS:HB3	8:H:54:LYS:HE2	1.82	0.43
15:O:128:ILE:HD12	15:O:160:ILE:HG13	2.01	0.43
9:I:50:TYR:CD1	9:I:51:PRO:HA	2.54	0.43
20:T:79:TYR:O	20:T:83:LYS:HG2	2.19	0.43
24:Y:128:GLN:NE2	47:Y:202:LMT:O2B	2.50	0.43
25:Z:126:LEU:HD13	30:e:82:ARG:HD2	2.01	0.43
37:l:158:ILE:HG21	40:o:100:GLU:HG2	2.00	0.43
41:p:20:SER:O	41:p:20:SER:OG	2.22	0.43
12:L:383:MET:HE2	12:L:383:MET:HB2	1.89	0.43
12:L:559:GLU:OE1	12:L:564:LYS:HE2	2.19	0.43
14:N:236:LYS:HB2	14:N:311:MET:HE1	2.01	0.43
15:O:198:TYR:OH	59:O:502:HOH:O	2.22	0.43
36:k:88:GLU:O	36:k:91:LYS:HG3	2.19	0.43
6:F:90:PRO:O	6:F:218:CYS:HB3	2.18	0.42
8:H:134:ARG:NH2	59:H:728:HOH:O	2.52	0.42
11:K:14:VAL:HG22	52:K:101:CDL:H412	2.01	0.42
13:M:148:TYR:CE2	13:M:218[A]:LYS:HE3	2.53	0.42
16:P:1:LEU:HD11	16:P:5:VAL:HG23	2.01	0.42
16:P:143:SER:OG	16:P:282:ASP:OD1	2.25	0.42
16:P:171:ILE:HG13	55:P:401:NDP:H42N	2.01	0.42
20:T:51:ILE:HG12	20:T:67:ALA:HB1	2.02	0.42
23:X:129:LYS:NZ	27:b:62:MET:O	2.49	0.42
39:n:149:ARG:HE	39:n:149:ARG:HB3	1.65	0.42
5:E:205:PRO:HA	5:E:206:PRO:HD3	1.95	0.42
7:G:449:PRO:HD2	7:G:483:VAL:HG22	2.01	0.42
14:N:62:THR:HG21	14:N:114:TRP:CD1	2.54	0.42
15:O:318:TRP:H	15:O:318:TRP:CD1	2.37	0.42
31:f:57:LYS:HB3	31:f:57:LYS:HE2	1.82	0.42
1:A:15:THR:HG23	45:A:201:PC1:H351	2.00	0.42
45:B:203:PC1:H2F2	45:B:203:PC1:H2C1	1.78	0.42
6:F:94:VAL:HG11	6:F:192:LEU:HD22	2.00	0.42
20:U:11:ILE:HD11	20:U:86:VAL:HG21	2.00	0.42
23:X:15:GLN:HE21	23:X:15:GLN:HB2	1.59	0.42
46:Y:201:3PE:H2F1	46:Y:201:3PE:H2I3	1.75	0.42
40:o:117:ARG:HG3	40:o:118:GLU:N	2.35	0.42
7:G:539:LYS:O	7:G:539:LYS:HG2	2.18	0.42
12:L:74:LEU:HD13	12:L:190:LEU:HD13	2.02	0.42
15:O:138:MET:CE	54:O:402:DGT:HN2	2.32	0.42
16:P:1:LEU:HD22	16:P:89:SER:HB3	2.00	0.42
1:A:71:LEU:O	10:J:147:TYR:OH	2.31	0.42
5:E:192:SER:OG	5:E:193:CYS:N	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:109:ASP:OD2	7:G:214:ALA:HA	2.19	0.42
7:G:170:ASP:OD2	59:G:909:HOH:O	2.22	0.42
7:G:673:MET:HE2	7:G:685:ALA:HA	2.00	0.42
7:G:690:ALA:CB	7:G:698:VAL:HG21	2.49	0.42
12:L:480:MET:SD	40:o:87:ASP:OD1	2.77	0.42
46:M:602:3PE:H2H1	46:M:602:3PE:H2E2	1.80	0.42
45:M:604:PC1:H131	47:M:606:LMT:H1B	2.01	0.42
52:N:401:CDL:H181	52:N:401:CDL:H381	2.01	0.42
20:U:3:ALA:HA	20:U:4:PRO:HD3	1.93	0.42
47:Y:202:LMT:H31	47:Y:202:LMT:H62	1.68	0.42
52:h:201:CDL:HB4	52:h:201:CDL:H512	1.68	0.42
34:i:87:TYR:CE1	41:p:48:ARG:HG2	2.54	0.42
38:m:5:TYR:CE1	38:m:14:PRO:HD3	2.54	0.42
43:r:112:LEU:HA	43:r:112:LEU:HD23	1.76	0.42
7:G:135:ARG:HG2	59:G:1026:HOH:O	2.19	0.42
7:G:254:MET:HA	7:G:260:GLU:O	2.19	0.42
7:G:312:GLY:HA2	7:G:339:ASP:O	2.19	0.42
13:M:115:LEU:HD23	13:M:115:LEU:HA	1.89	0.42
16:P:122:LYS:HD2	16:P:122:LYS:HA	1.88	0.42
20:T:31:SER:H	20:T:34:SER:HB2	1.85	0.42
31:f:43:LEU:HD23	31:f:44:TYR:CE2	2.55	0.42
37:l:80:ASP:HB3	37:l:83:MET:HE2	2.01	0.42
38:m:71:ARG:HG3	59:m:311:HOH:O	2.20	0.42
7:G:266:LYS:HB2	7:G:266:LYS:HE3	1.92	0.42
7:G:488:LYS:HD3	7:G:642[B]:PHE:HZ	1.84	0.42
46:L:706:3PE:H391	46:L:706:3PE:H3C2	1.82	0.42
13:M:42:MET:HE1	13:M:453:ILE:HD12	2.01	0.42
20:T:29:LYS:NZ	20:T:29:LYS:HB3	2.35	0.42
20:U:7:THR:HG22	20:U:9:GLU:H	1.85	0.42
39:n:134:ARG:HH21	39:n:161:ASP:HA	1.85	0.42
6:F:154:ARG:HA	44:s:58:LEU:HD21	2.01	0.42
9:I:15:LYS:NZ	9:I:19:ASP:OD1	2.52	0.42
10:J:157:THR:HG21	11:K:62:ILE:HD12	2.02	0.42
12:L:558:LEU:HD21	46:m:201:3PE:H2I3	2.00	0.42
15:O:91:GLY:HA3	15:O:281:GLU:HG3	2.02	0.42
24:Y:99:ILE:HD13	24:Y:99:ILE:HA	1.79	0.42
29:d:1:MET:HA	33:h:123:PHE:H	1.85	0.42
34:i:62:LYS:HB3	34:i:62:LYS:HE3	1.83	0.42
34:i:119:MET:HE1	40:o:60:HIS:O	2.20	0.42
52:r:201:CDL:H572	52:r:201:CDL:H601	1.87	0.42
1:A:85:ASN:CG	47:A:204:LMT:H5'	2.45	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:34:ASP:HB3	2:B:174:ARG:HH21	1.85	0.42
8:H:176:LEU:HD13	8:H:176:LEU:HA	1.93	0.42
12:L:264:TYR:CD2	12:L:265:PRO:HD3	2.55	0.42
52:N:401:CDL:H212	52:N:401:CDL:H182	1.93	0.42
52:N:401:CDL:H711	52:N:401:CDL:CB5	2.50	0.42
47:i:201:LMT:H82	47:i:201:LMT:H51	1.66	0.42
39:n:96:TYR:HB3	39:n:178:MET:SD	2.60	0.42
4:D:409:HIS:HB3	4:D:413:ASP:HB2	2.00	0.42
8:H:90:PRO:HD2	8:H:240:ILE:HD13	2.01	0.42
12:L:9:LEU:HD23	12:L:9:LEU:HA	1.91	0.42
12:L:49:ILE:O	12:L:53:MET:HG3	2.20	0.42
13:M:148:TYR:CE2	13:M:218[B]:LYS:HE3	2.53	0.42
14:N:347:GLU:C	29:d:8:ARG:HH22	2.27	0.42
19:S:42:GLU:OE2	19:S:42:GLU:HA	2.19	0.42
35:j:19:ARG:HA	35:j:19:ARG:NE	2.34	0.42
7:G:686:LYS:O	7:G:698:VAL:HG11	2.20	0.41
12:L:22:MET:SD	12:L:27:TYR:OH	2.63	0.41
12:L:210:ASN:O	12:L:214:ILE:HD12	2.20	0.41
12:L:290:MET:HE3	12:L:290:MET:HB3	1.88	0.41
13:M:191:SER:HB2	46:M:601:3PE:H2	2.02	0.41
13:M:281:ASP:HB3	13:M:284:SER:CB	2.49	0.41
15:O:40:LYS:HE3	15:O:40:LYS:HB3	1.80	0.41
15:O:263:VAL:O	15:O:266:LYS:NZ	2.46	0.41
24:Y:21:THR:O	24:Y:25:THR:OG1	2.28	0.41
30:e:96:HIS:ND1	30:e:97:HIS:HD2	2.17	0.41
47:i:201:LMT:O2B	47:i:201:LMT:O6'	2.33	0.41
6:F:184:TYR:CE2	50:F:501:FMN:HM73	2.54	0.41
12:L:384:PRO:HA	12:L:389:PHE:CD1	2.54	0.41
12:L:407:TRP:HE3	58:o:201:MYR:H132	1.85	0.41
14:N:202:LEU:HD13	45:d:204:PC1:H342	2.02	0.41
47:Y:202:LMT:O2B	47:Y:202:LMT:H4'	2.19	0.41
37:l:12:PRO:O	37:l:46:ASP:HB3	2.20	0.41
5:E:179:GLY:C	5:E:180:LYS:HG2	2.46	0.41
7:G:287:GLU:CD	7:G:287:GLU:H	2.29	0.41
7:G:616:LEU:O	7:G:620:ARG:HG3	2.20	0.41
8:H:316:PRO:HG3	25:Z:56:ARG:HB3	2.02	0.41
11:K:37:MET:SD	11:K:67:ALA:HB2	2.61	0.41
52:N:401:CDL:H362	52:N:401:CDL:H162	2.02	0.41
16:P:268:ARG:HD3	16:P:281:ARG:CZ	2.50	0.41
22:W:38:TRP:CD2	22:W:89:LEU:HD13	2.55	0.41
39:n:27:GLU:OE2	39:n:33:ARG:NH1	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:231:SER:N	6:F:232:PRO:HD2	2.35	0.41
7:G:488:LYS:HD3	7:G:642[B]:PHE:CZ	2.56	0.41
10:J:70:TYR:HB3	11:K:27:MET:HE1	2.02	0.41
15:O:104:ARG:NH1	15:O:131:ASP:OD1	2.49	0.41
17:Q:126:LYS:HD3	17:Q:126:LYS:HA	1.83	0.41
29:d:105:ASP:OD1	29:d:105:ASP:N	2.46	0.41
39:n:15:VAL:HG22	39:n:63:LEU:HD13	2.03	0.41
12:L:308:SER:HB2	59:L:810:HOH:O	2.21	0.41
20:T:48:VAL:O	20:T:52:MET:HG3	2.21	0.41
11:K:43:MET:HG2	14:N:75:ILE:HG21	2.02	0.41
12:L:230:HIS:N	12:L:231:PRO:HD3	2.36	0.41
12:L:341:MET:HE3	12:L:454:ILE:HG12	2.01	0.41
13:M:12:MET:HE1	46:d:201:3PE:H2G2	2.03	0.41
13:M:200:MET:HE3	13:M:204:MET:HE2	2.03	0.41
15:O:22:SER:HB3	15:O:115:LEU:HD11	2.03	0.41
16:P:19:ILE:HD11	16:P:219:LYS:HZ3	1.86	0.41
16:P:211:THR:O	16:P:215:ILE:HG12	2.21	0.41
17:Q:18:ASP:OD2	17:Q:18:ASP:C	2.64	0.41
20:U:43:ASP:OD1	20:U:43:ASP:N	2.50	0.41
35:j:41:TRP:HD1	35:j:42:HIS:CE1	2.39	0.41
46:m:201:3PE:H31	46:m:201:3PE:H241	2.01	0.41
7:G:651:LEU:HD21	19:S:45:LYS:HD3	2.03	0.41
8:H:247:HIS:ND1	59:H:715:HOH:O	2.36	0.41
8:H:301:CYS:O	8:H:305:VAL:HG23	2.19	0.41
29:d:53:VAL:HB	46:d:201:3PE:H121	2.01	0.41
44:s:31:GLU:N	44:s:32:PRO:HD2	2.36	0.41
4:D:286:PRO:HG2	4:D:303:GLU:HG3	2.02	0.41
7:G:550:GLY:HA3	42:q:137:TRP:CG	2.56	0.41
9:I:80:CYS:SG	9:I:82:LEU:HB2	2.60	0.41
12:L:295:GLN:O	12:L:425:ARG:NH2	2.52	0.41
12:L:545:SER:HB3	13:M:274:SER:O	2.20	0.41
20:T:71:MET:O	20:T:71:MET:HG3	2.20	0.41
4:D:152:MET:HE2	4:D:152:MET:HB2	1.96	0.41
5:E:153:MET:HE2	5:E:153:MET:HB2	1.82	0.41
6:F:436:GLN:N	6:F:436:GLN:OE1	2.54	0.41
12:L:434:GLN:HG3	36:k:52:TYR:CE2	2.56	0.41
12:L:530:PRO:O	12:L:534:HIS:HB2	2.21	0.41
12:L:564:LYS:HZ2	47:L:704:LMT:H4B	1.86	0.41
13:M:74:PRO:HA	13:M:77:LEU:HD12	2.03	0.41
13:M:148:TYR:CD2	13:M:218[B]:LYS:HE3	2.56	0.41
13:M:197:LEU:HB3	46:M:601:3PE:H2D1	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:N:402:3PE:H2A2	46:N:402:3PE:H272	1.80	0.41
46:N:402:3PE:H351	46:N:402:3PE:H321	1.81	0.41
15:O:13:LYS:HB3	15:O:253:ASP:CG	2.45	0.41
16:P:73:TRP:CZ3	16:P:75:GLY:HA2	2.56	0.41
16:P:129:PHE:CE2	16:P:131:HIS:HB2	2.56	0.41
45:Z:200:PC1:H111	45:Z:200:PC1:H133	1.55	0.41
30:e:82:ARG:O	30:e:86:ILE:N	2.53	0.41
32:g:118:ILE:HG23	41:p:159:LYS:HE2	2.03	0.41
34:i:121:GLU:OE2	34:i:122:PHE:N	2.51	0.41
34:i:122:PHE:CE2	40:o:60:HIS:HD2	2.39	0.41
3:C:51:CYS:HB3	21:V:111:TRP:CE2	2.55	0.41
4:D:148:LEU:HD23	4:D:174:ARG:HG2	2.03	0.41
7:G:114:CYS:HB3	7:G:117:GLN:HB2	2.03	0.41
8:H:53:ILE:O	8:H:57:ILE:HG12	2.20	0.41
12:L:42:TYR:O	12:L:46:THR:HG23	2.21	0.41
14:N:278:LEU:O	14:N:282:MET:HG3	2.21	0.41
52:h:201:CDL:H111	52:h:201:CDL:HA4	1.85	0.41
4:D:123:GLU:OE2	4:D:138:ARG:NH2	2.51	0.40
7:G:83:SER:O	7:G:87:LYS:HG3	2.21	0.40
8:H:156:MET:HG3	59:H:795:HOH:O	2.21	0.40
12:L:128:MET:HG2	12:L:251:THR:HA	2.02	0.40
13:M:176:PHE:HB3	59:M:765:HOH:O	2.21	0.40
15:O:20:GLU:H	15:O:20:GLU:HG3	1.56	0.40
17:Q:49:VAL:O	17:Q:52:THR:OG1	2.35	0.40
24:Y:82:LYS:O	24:Y:88:ASN:ND2	2.50	0.40
45:Z:200:PC1:H362	45:Z:200:PC1:H331	1.73	0.40
36:k:44:TRP:HB2	39:n:37:ARG:NH1	2.35	0.40
41:p:72:ASP:OD1	41:p:90:GLN:NE2	2.54	0.40
4:D:286:PRO:HG3	4:D:302:GLU:HG3	2.04	0.40
7:G:539:LYS:HB3	7:G:539:LYS:HE2	1.70	0.40
8:H:65:THR:HA	16:P:324:TYR:HB2	2.03	0.40
11:K:37:MET:HE2	11:K:37:MET:HA	2.02	0.40
12:L:61:LEU:HA	12:L:61:LEU:HD23	1.78	0.40
13:M:153:THR:O	13:M:157:SER:OG	2.31	0.40
1:A:96:ILE:HG12	46:b:101:3PE:H2F1	2.03	0.40
46:A:202:3PE:H322	46:A:202:3PE:H31	1.83	0.40
45:B:203:PC1:H222	16:P:275:PHE:CE1	2.56	0.40
5:E:108:CYS:HA	5:E:151:ALA:HB1	2.03	0.40
6:F:156:ALA:HA	6:F:161:LEU:HD12	2.04	0.40
13:M:148:TYR:CD2	13:M:218[A]:LYS:HE3	2.57	0.40
45:M:603:PC1:H2A1	45:M:603:PC1:H2D1	1.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:129:PHE:HE2	16:P:131:HIS:HB2	1.86	0.40
20:T:16:LEU:O	20:T:20:LYS:HG2	2.21	0.40
45:Z:200:PC1:O12	59:Z:301:HOH:O	2.22	0.40
30:e:48:SER:HB3	33:h:125:TYR:HB2	2.03	0.40
37:l:134:PRO:HB2	37:l:135:TYR:CD2	2.56	0.40
42:q:117:LEU:HD13	42:q:122:GLN:HB3	2.04	0.40
24:Y:75:ILE:HD13	24:Y:75:ILE:HA	1.88	0.40
52:d:205:CDL:H441	52:d:205:CDL:H412	1.70	0.40
39:n:61:GLN:HE21	39:n:61:GLN:HB2	1.69	0.40
39:n:99:PRO:HB2	39:n:101:TRP:CD1	2.56	0.40
42:q:8:LYS:O	42:q:12:GLN:HG2	2.22	0.40
4:D:352:TYR:HD1	9:I:86:VAL:HG21	1.86	0.40
7:G:224:LYS:HD3	7:G:224:LYS:N	2.36	0.40
7:G:616:LEU:HA	7:G:619:VAL:HG12	2.04	0.40
11:K:12:PHE:CG	14:N:72:MET:HE2	2.57	0.40
12:L:537:ALA:HB3	12:L:538:PRO:HD3	2.04	0.40
13:M:80:SER:OG	13:M:226:ALA:HB2	2.20	0.40
15:O:244:ASP:OD1	15:O:244:ASP:N	2.47	0.40
25:Z:119:MET:HE2	30:e:71:THR:CG2	2.52	0.40
38:m:53:PRO:HB3	39:n:128:ARG:HD3	2.04	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	113/115 (98%)	107 (95%)	6 (5%)	0	100 100
2	B	152/216 (70%)	146 (96%)	5 (3%)	1 (1%)	18 17
3	C	207/266 (78%)	202 (98%)	5 (2%)	0	100 100
4	D	427/463 (92%)	410 (96%)	17 (4%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
5	E	212/249 (85%)	201 (95%)	9 (4%)	2 (1%)	14 12
6	F	430/464 (93%)	411 (96%)	18 (4%)	1 (0%)	43 50
7	G	698/727 (96%)	674 (97%)	21 (3%)	3 (0%)	30 31
8	H	316/318 (99%)	302 (96%)	13 (4%)	1 (0%)	36 40
9	I	174/212 (82%)	170 (98%)	4 (2%)	0	100 100
10	J	173/175 (99%)	163 (94%)	9 (5%)	1 (1%)	21 21
11	K	96/98 (98%)	94 (98%)	2 (2%)	0	100 100
12	L	604/606 (100%)	573 (95%)	28 (5%)	3 (0%)	24 24
13	M	462/459 (101%)	453 (98%)	9 (2%)	0	100 100
14	N	345/347 (99%)	336 (97%)	9 (3%)	0	100 100
15	O	318/343 (93%)	307 (96%)	11 (4%)	0	100 100
16	P	340/380 (90%)	330 (97%)	9 (3%)	1 (0%)	36 40
17	Q	127/175 (73%)	126 (99%)	0	1 (1%)	16 14
18	R	94/124 (76%)	92 (98%)	2 (2%)	0	100 100
19	S	85/99 (86%)	79 (93%)	6 (7%)	0	100 100
20	T	83/156 (53%)	78 (94%)	4 (5%)	1 (1%)	10 7
20	U	84/156 (54%)	77 (92%)	5 (6%)	2 (2%)	4 2
21	V	114/116 (98%)	112 (98%)	1 (1%)	1 (1%)	14 12
22	W	113/128 (88%)	110 (97%)	3 (3%)	0	100 100
23	X	169/172 (98%)	166 (98%)	3 (2%)	0	100 100
24	Y	139/141 (99%)	138 (99%)	1 (1%)	0	100 100
25	Z	139/144 (96%)	133 (96%)	5 (4%)	1 (1%)	18 17
26	a	68/70 (97%)	68 (100%)	0	0	100 100
27	b	82/84 (98%)	78 (95%)	3 (4%)	1 (1%)	10 7
28	c	47/76 (62%)	46 (98%)	1 (2%)	0	100 100
29	d	119/121 (98%)	116 (98%)	3 (2%)	0	100 100
30	e	97/106 (92%)	93 (96%)	4 (4%)	0	100 100
31	f	55/57 (96%)	52 (94%)	2 (4%)	1 (2%)	6 3
32	g	98/154 (64%)	91 (93%)	7 (7%)	0	100 100
33	h	136/189 (72%)	134 (98%)	2 (2%)	0	100 100
34	i	107/128 (84%)	98 (92%)	7 (6%)	2 (2%)	6 3

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
35	j	65/108 (60%)	62 (95%)	3 (5%)	0	100 100
36	k	79/98 (81%)	75 (95%)	3 (4%)	1 (1%)	9 6
37	l	154/186 (83%)	147 (96%)	7 (4%)	0	100 100
38	m	126/129 (98%)	119 (94%)	6 (5%)	1 (1%)	16 14
39	n	170/179 (95%)	162 (95%)	8 (5%)	0	100 100
40	o	120/137 (88%)	112 (93%)	7 (6%)	1 (1%)	16 14
41	p	171/176 (97%)	166 (97%)	5 (3%)	0	100 100
42	q	144/146 (99%)	142 (99%)	2 (1%)	0	100 100
43	r	92/113 (81%)	88 (96%)	4 (4%)	0	100 100
44	s	44/109 (40%)	39 (89%)	5 (11%)	0	100 100
All	All	8188/9215 (89%)	7878 (96%)	284 (4%)	26 (0%)	37 40

All (26) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
12	L	562	LEU
20	T	70	LEU
5	E	180	LYS
25	Z	101	PRO
38	m	23	ASP
2	B	49	THR
5	E	188	SER
6	F	99	GLU
27	b	1	ALA
34	i	124	ASP
34	i	125	GLN
40	o	32	GLU
7	G	484	THR
12	L	26	THR
16	P	2	HIS
17	Q	9	GLN
20	U	34	SER
36	k	58	ASN
12	L	513	TYR
20	U	39	ASP
31	f	50	PRO
7	G	703	ILE
8	H	208	VAL

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Mol	Chain	Res	Type
10	J	24	PRO
7	G	698	VAL
21	V	2	GLY

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	100/100 (100%)	93 (93%)	7 (7%)	14	13
2	B	130/174 (75%)	127 (98%)	3 (2%)	44	55
3	C	190/228 (83%)	189 (100%)	1 (0%)	81	87
4	D	370/392 (94%)	366 (99%)	4 (1%)	65	75
5	E	183/205 (89%)	178 (97%)	5 (3%)	39	49
6	F	346/368 (94%)	341 (99%)	5 (1%)	59	70
7	G	587/608 (96%)	569 (97%)	18 (3%)	35	44
8	H	274/274 (100%)	269 (98%)	5 (2%)	51	63
9	I	151/175 (86%)	149 (99%)	2 (1%)	61	72
10	J	141/141 (100%)	136 (96%)	5 (4%)	32	39
11	K	85/85 (100%)	84 (99%)	1 (1%)	63	74
12	L	533/533 (100%)	515 (97%)	18 (3%)	32	40
13	M	416/412 (101%)	403 (97%)	13 (3%)	35	44
14	N	315/315 (100%)	312 (99%)	3 (1%)	68	77
15	O	283/303 (93%)	273 (96%)	10 (4%)	32	39
16	P	296/327 (90%)	292 (99%)	4 (1%)	59	70
17	Q	116/153 (76%)	110 (95%)	6 (5%)	21	22
18	R	79/97 (81%)	77 (98%)	2 (2%)	42	52
19	S	77/82 (94%)	73 (95%)	4 (5%)	21	22
20	T	79/135 (58%)	77 (98%)	2 (2%)	42	52
20	U	79/135 (58%)	76 (96%)	3 (4%)	29	36

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
21	V	101/101 (100%)	101 (100%)	0	100	100
22	W	107/114 (94%)	103 (96%)	4 (4%)	30	37
23	X	154/155 (99%)	151 (98%)	3 (2%)	50	61
24	Y	101/101 (100%)	95 (94%)	6 (6%)	18	18
25	Z	120/121 (99%)	118 (98%)	2 (2%)	53	65
26	a	59/59 (100%)	56 (95%)	3 (5%)	21	23
27	b	71/71 (100%)	70 (99%)	1 (1%)	59	70
28	c	45/68 (66%)	45 (100%)	0	100	100
29	d	106/106 (100%)	98 (92%)	8 (8%)	12	11
30	e	89/96 (93%)	83 (93%)	6 (7%)	15	14
31	f	54/54 (100%)	50 (93%)	4 (7%)	13	11
32	g	91/131 (70%)	87 (96%)	4 (4%)	25	29
33	h	121/158 (77%)	118 (98%)	3 (2%)	42	52
34	i	106/121 (88%)	103 (97%)	3 (3%)	38	48
35	j	61/84 (73%)	61 (100%)	0	100	100
36	k	63/76 (83%)	60 (95%)	3 (5%)	23	25
37	l	140/159 (88%)	133 (95%)	7 (5%)	22	24
38	m	114/115 (99%)	108 (95%)	6 (5%)	20	22
39	n	156/161 (97%)	153 (98%)	3 (2%)	50	61
40	o	110/120 (92%)	108 (98%)	2 (2%)	51	63
41	p	155/157 (99%)	150 (97%)	5 (3%)	34	43
42	q	131/131 (100%)	128 (98%)	3 (2%)	44	55
43	r	85/96 (88%)	82 (96%)	3 (4%)	32	39
44	s	45/92 (49%)	44 (98%)	1 (2%)	45	56
All	All	7215/7889 (92%)	7014 (97%)	201 (3%)	38	48

All (201) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	13	LEU
1	A	31	SER
1	A	42	ASP
1	A	44	MET
1	A	60	ILE

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Mol	Chain	Res	Type
1	A	69	ILE
1	A	97	LEU
2	B	34	ASP
2	B	54	CYS
2	B	175	ILE
3	C	33	LEU
4	D	29	LYS
4	D	42	THR
4	D	44	VAL
4	D	225	LEU
5	E	75	VAL
5	E	135	LYS
5	E	169	ILE
5	E	181	ILE
5	E	203	THR
6	F	10	THR
6	F	34	LYS
6	F	105	CYS
6	F	288	THR
6	F	324	GLN
7	G	16	GLN
7	G	75	LYS
7	G	164	SER
7	G	174	THR
7	G	243	ARG
7	G	288	LYS
7	G	364	LEU
7	G	441	GLN
7	G	442	VAL
7	G	484	THR
7	G	521	MET
7	G	536	ASP
7	G	540	ASP
7	G	609	MET
7	G	651	LEU
7	G	657	LEU
7	G	667	THR
7	G	704	CYS
8	H	28	LEU
8	H	54	LYS
8	H	145	THR
8	H	146	LEU

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Mol	Chain	Res	Type
8	H	176	LEU
9	I	3	LYS
9	I	54	LYS
10	J	87	LYS
10	J	110	ASP
10	J	115	VAL
10	J	133	SER
10	J	135	PHE
11	K	2	SER
12	L	22	MET
12	L	23	SER
12	L	114	ILE
12	L	124	PHE
12	L	131	LEU
12	L	132	VAL
12	L	207	SER
12	L	286	LEU
12	L	308	SER
12	L	371	THR
12	L	383	MET
12	L	387	THR
12	L	393	ASP
12	L	440	LEU
12	L	513	TYR
12	L	554	ASP
12	L	555	LEU
12	L	576	LEU
13	M	62	SER
13	M	87	GLU
13	M	88	ASN
13	M	144	ASN
13	M	173	SER
13	M	220[A]	HIS
13	M	220[B]	HIS
13	M	221[A]	VAL
13	M	221[B]	VAL
13	M	274	SER
13	M	296	LEU
13	M	340	ARG
13	M	458	LEU
14	N	10	LEU
14	N	231	SER

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Mol	Chain	Res	Type
14	N	320	MET
15	O	20	GLU
15	O	32	CYS
15	O	60	ASP
15	O	74	SER
15	O	89	ASN
15	O	179	VAL
15	O	195	THR
15	O	206	TYR
15	O	245	LYS
15	O	250	ASP
16	P	119	GLN
16	P	142	SER
16	P	268	ARG
16	P	330	GLU
17	Q	5	THR
17	Q	7	ASP
17	Q	8	THR
17	Q	44	ASN
17	Q	106	GLU
17	Q	133	LYS
18	R	3	ARG
18	R	4	THR
19	S	32	VAL
19	S	47	ASN
19	S	56	GLU
19	S	60	VAL
20	T	28	GLU
20	T	72	CYS
20	U	32	VAL
20	U	39	ASP
20	U	88	GLU
22	W	15	SER
22	W	67	LYS
22	W	119	SER
22	W	123	VAL
23	X	5	GLU
23	X	98	ARG
23	X	130	VAL
24	Y	2	LYS
24	Y	16	GLU
24	Y	43	LYS

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Mol	Chain	Res	Type
24	Y	49	LEU
24	Y	79	VAL
24	Y	104	THR
25	Z	87	ARG
25	Z	130	GLU
26	a	5	VAL
26	a	21	MET
26	a	28	ARG
27	b	41	SER
29	d	2	MET
29	d	3	THR
29	d	5	ARG
29	d	6	GLN
29	d	10	THR
29	d	49	ARG
29	d	85	VAL
29	d	111	GLU
30	e	5	VAL
30	e	48	SER
30	e	54	GLU
30	e	79	ARG
30	e	84	LYS
30	e	90	LYS
31	f	6	VAL
31	f	7	VAL
31	f	45	LYS
31	f	49	LYS
32	g	25	ARG
32	g	86	GLN
32	g	107	ILE
32	g	116	SER
33	h	19	LYS
33	h	23	LYS
33	h	81	ASP
34	i	39	VAL
34	i	66	HIS
34	i	112	THR
36	k	60	VAL
36	k	87	LEU
36	k	91	LYS
37	l	3	HIS
37	l	5	THR

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Mol	Chain	Res	Type
37	l	42	THR
37	l	49	LYS
37	l	75	GLU
37	l	113	LEU
37	l	154	VAL
38	m	8	SER
38	m	40	SER
38	m	79	PHE
38	m	91	LEU
38	m	119	LYS
38	m	120	LEU
39	n	57	VAL
39	n	145	VAL
39	n	178	MET
40	o	27	ASP
40	o	120	ASP
41	p	16	THR
41	p	66	GLU
41	p	115	ARG
41	p	141	ARG
41	p	171	GLU
42	q	1	MET
42	q	67	GLU
42	q	144	TYR
43	r	68	VAL
43	r	106	SER
43	r	107	GLN
44	s	59	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (64) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	83	ASN
4	D	27	HIS
4	D	266	GLN
6	F	200	GLN
6	F	373	ASN
6	F	435	GLN
7	G	155	GLN
7	G	277	GLN
7	G	640	ASN
7	G	655	GLN

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Mol	Chain	Res	Type
8	H	5	ASN
8	H	317	GLN
11	K	50	ASN
12	L	135	ASN
12	L	165	ASN
12	L	354	GLN
12	L	434	GLN
12	L	442	ASN
12	L	471	ASN
12	L	541	ASN
13	M	184	GLN
13	M	188	ASN
13	M	304	GLN
13	M	399	ASN
13	M	415	GLN
14	N	2	ASN
14	N	48	HIS
14	N	186	HIS
14	N	222	ASN
15	O	89	ASN
15	O	287	HIS
16	P	2	HIS
16	P	87	HIS
16	P	93	ASN
17	Q	29	HIS
19	S	61	GLN
20	T	74	GLN
21	V	36	HIS
21	V	75	GLN
21	V	95	GLN
22	W	44	ASN
23	X	15	GLN
25	Z	75	GLN
29	d	79	GLN
30	e	6	GLN
30	e	97	HIS
33	h	143	ASN
34	i	82	HIS
34	i	125	GLN
34	i	127	HIS
37	l	66	HIS
38	m	49	GLN

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Mol	Chain	Res	Type
39	n	12	GLN
39	n	52	ASN
39	n	61	GLN
39	n	72	HIS
39	n	140	GLN
39	n	159	GLN
40	o	42	GLN
41	p	22	GLN
41	p	58	ASN
42	q	72	ASN
42	q	112	ASN
43	r	28	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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	$\#\|Z\| > 2$
1	FME	A	1	1	8,9,10	1.48	1 (12%)	7,9,11	1.62	2 (28%)
10	FME	J	1	10	8,9,10	1.51	1 (12%)	7,9,11	1.50	1 (14%)
8	FME	H	1	8	8,9,10	1.51	1 (12%)	7,9,11	1.60	1 (14%)
12	FME	L	1	12	8,9,10	1.47	1 (12%)	7,9,11	1.73	3 (42%)
14	FME	N	1	14	8,9,10	1.50	1 (12%)	7,9,11	1.59	1 (14%)
2	WYK	B	77	2	9,11,12	2.39	2 (22%)	7,13,15	0.92	0
11	FME	K	1	11	8,9,10	1.53	1 (12%)	7,9,11	1.79	2 (28%)
13	FME	M	1	13	8,9,10	1.48	1 (12%)	7,9,11	2.10	2 (28%)
4	2MR	D	85	4	10,12,13	2.25	2 (20%)	5,13,15	1.85	1 (20%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	FME	A	1	1	-	2/7/9/11	-
10	FME	J	1	10	-	4/7/9/11	-
8	FME	H	1	8	-	2/7/9/11	-
12	FME	L	1	12	-	1/7/9/11	-
14	FME	N	1	14	-	2/7/9/11	-
2	WYK	B	77	2	-	4/10/11/13	-
11	FME	K	1	11	-	2/7/9/11	-
13	FME	M	1	13	-	6/7/9/11	-
4	2MR	D	85	4	-	0/10/13/15	-

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	77	WYK	CZ-NE	6.15	1.45	1.33
4	D	85	2MR	CZ-NH2	5.05	1.44	1.33
4	D	85	2MR	CZ-NE	4.43	1.43	1.34
14	N	1	FME	CN-N	3.73	1.45	1.33
10	J	1	FME	CN-N	3.73	1.45	1.33
11	K	1	FME	CN-N	3.72	1.45	1.33
8	H	1	FME	CN-N	3.54	1.45	1.33
12	L	1	FME	CN-N	3.46	1.44	1.33
13	M	1	FME	CN-N	3.42	1.44	1.33
1	A	1	FME	CN-N	3.40	1.44	1.33
2	B	77	WYK	CZ-NH2	-2.36	1.25	1.34

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
13	M	1	FME	CA-N-CN	-4.22	116.33	122.82
4	D	85	2MR	CD-NE-CZ	-3.52	116.81	123.41
14	N	1	FME	CE-SD-CG	2.88	110.30	100.40
8	H	1	FME	CE-SD-CG	2.87	110.27	100.40
10	J	1	FME	CE-SD-CG	2.76	109.87	100.40
12	L	1	FME	CE-SD-CG	2.66	109.53	100.40
1	A	1	FME	CE-SD-CG	2.62	109.41	100.40
11	K	1	FME	CE-SD-CG	2.49	108.96	100.40
11	K	1	FME	CA-N-CN	-2.49	119.00	122.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	L	1	FME	O1-CN-N	-2.18	119.54	125.27
12	L	1	FME	CA-N-CN	-2.12	119.56	122.82
1	A	1	FME	O1-CN-N	-2.07	119.82	125.27
13	M	1	FME	CE-SD-CG	2.05	107.44	100.40

There are no chirality outliers.

All (23) torsion outliers are listed below:

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

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
10	J	1	FME	1	0
2	B	77	WYK	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 57 ligands modelled in this entry, 3 are monoatomic - leaving 54 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	$\#\|Z\| > 2$
48	SF4	I	203	9	0,12,12	-	-	-		
46	3PE	M	601	-	44,44,50	0.92	3 (6%)	47,49,55	1.20	2 (4%)
52	CDL	N	401	-	59,59,99	1.12	6 (10%)	65,71,111	1.29	4 (6%)
48	SF4	G	802	7	0,12,12	-	-	-		
46	3PE	L	703	-	44,44,50	0.91	3 (6%)	47,49,55	1.12	2 (4%)
46	3PE	Y	201	-	39,39,50	0.96	3 (7%)	42,44,55	1.19	2 (4%)
52	CDL	L	702	-	59,59,99	1.15	6 (10%)	65,71,111	1.20	4 (6%)
45	PC1	B	203	-	53,53,53	1.22	3 (5%)	59,61,61	1.12	3 (5%)
45	PC1	M	603	-	38,38,53	1.42	5 (13%)	44,46,61	1.05	2 (4%)
52	CDL	d	205	-	64,64,99	1.09	6 (9%)	70,76,111	1.19	4 (5%)
57	EHZ	T	101	20	29,36,37	1.73	5 (17%)	35,44,47	2.24	10 (28%)
52	CDL	H	602	-	49,49,99	1.22	8 (16%)	55,61,111	1.36	7 (12%)
47	LMT	Y	202	-	36,36,36	1.11	2 (5%)	47,47,47	1.27	8 (17%)
46	3PE	L	706	-	34,34,50	1.05	3 (8%)	37,39,55	1.14	2 (5%)
52	CDL	r	201	-	61,61,99	1.13	7 (11%)	67,73,111	1.31	5 (7%)
46	3PE	I	204	-	34,34,50	1.05	4 (11%)	37,39,55	1.20	2 (5%)
46	3PE	m	201	-	39,39,50	0.99	4 (10%)	42,44,55	1.21	2 (4%)
45	PC1	A	201	-	34,34,53	1.47	4 (11%)	40,42,61	1.16	3 (7%)
46	3PE	d	203	-	36,36,50	0.97	3 (8%)	39,41,55	1.16	2 (5%)
47	LMT	A	204	-	36,36,36	1.07	2 (5%)	47,47,47	1.10	2 (4%)
45	PC1	L	707	-	39,39,53	1.41	5 (12%)	45,47,61	1.06	2 (4%)
47	LMT	M	606	-	36,36,36	1.13	2 (5%)	47,47,47	1.06	2 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
46	3PE	b	101	-	46,46,50	0.89	3 (6%)	49,51,55	1.20	3 (6%)
52	CDL	K	101	-	68,68,99	1.07	5 (7%)	74,80,111	1.17	4 (5%)
49	FES	E	301	5	0,4,4	-	-	-		
47	LMT	L	705	-	36,36,36	1.15	3 (8%)	47,47,47	1.10	1 (2%)
48	SF4	F	502	6	0,12,12	-	-	-		
46	3PE	M	602	-	50,50,50	0.87	2 (4%)	53,55,55	1.21	3 (5%)
47	LMT	p	201	-	36,36,36	1.12	2 (5%)	47,47,47	1.16	3 (6%)
47	LMT	M	605	-	36,36,36	1.13	2 (5%)	47,47,47	0.91	1 (2%)
46	3PE	d	201	-	47,47,50	0.86	4 (8%)	50,52,55	1.23	2 (4%)
48	SF4	I	202	9	0,12,12	-	-	-		
46	3PE	N	402	-	50,50,50	0.84	4 (8%)	53,55,55	0.97	2 (3%)
54	DGT	O	402	53	29,33,33	3.14	15 (51%)	44,52,52	2.09	13 (29%)
52	CDL	d	202	-	72,72,99	1.04	7 (9%)	78,84,111	1.16	5 (6%)
45	PC1	B	202	-	40,40,53	1.39	4 (10%)	46,48,61	1.11	2 (4%)
47	LMT	i	201	-	36,36,36	1.14	2 (5%)	47,47,47	0.89	0
52	CDL	h	201	-	77,77,99	1.01	8 (10%)	83,89,111	1.30	5 (6%)
48	SF4	B	201	2	0,12,12	-	-	-		
48	SF4	G	801	7	0,12,12	-	-	-		
57	EHZ	U	101	20	29,36,37	1.66	5 (17%)	35,44,47	1.83	10 (28%)
46	3PE	H	601	-	28,28,50	1.05	2 (7%)	31,33,55	1.24	3 (9%)
47	LMT	L	704	-	36,36,36	1.17	2 (5%)	47,47,47	1.08	4 (8%)
50	FMN	F	501	-	33,33,33	2.57	10 (30%)	48,50,50	1.89	15 (31%)
45	PC1	Z	200	-	47,47,53	1.38	6 (12%)	53,55,61	1.28	5 (9%)
45	PC1	d	204	-	32,32,53	1.52	4 (12%)	38,40,61	1.19	2 (5%)
55	NDP	P	401	-	49,52,52	3.93	24 (48%)	66,80,80	2.00	14 (21%)
58	MYR	o	201	40	14,14,15	0.42	0	13,13,15	0.95	0
46	3PE	L	701	-	38,38,50	1.01	3 (7%)	41,43,55	1.32	3 (7%)
45	PC1	A	203	-	32,32,53	1.55	5 (15%)	38,40,61	1.18	2 (5%)
45	PC1	M	604	-	41,41,53	1.42	6 (14%)	47,49,61	1.11	2 (4%)
46	3PE	I	201	-	37,37,50	1.00	4 (10%)	40,42,55	1.13	3 (7%)
46	3PE	A	202	-	36,36,50	1.01	4 (11%)	39,41,55	1.18	2 (5%)
49	FES	G	803	7	0,4,4	-	-	-		

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
48	SF4	I	203	9	-	-	0/6/5/5
46	3PE	M	601	-	-	34/48/48/54	-
52	CDL	N	401	-	-	32/69/69/110	-
48	SF4	G	802	7	-	-	0/6/5/5
46	3PE	L	703	-	-	19/48/48/54	-
46	3PE	Y	201	-	-	22/43/43/54	-
52	CDL	L	702	-	-	35/70/70/110	-
45	PC1	B	203	-	-	27/57/57/57	-
45	PC1	M	603	-	-	12/42/42/57	-
52	CDL	d	205	-	-	34/75/75/110	-
57	EHZ	T	101	20	-	17/42/44/45	-
52	CDL	H	602	-	-	29/60/60/110	-
47	LMT	Y	202	-	-	8/21/61/61	0/2/2/2
46	3PE	L	706	-	-	21/38/38/54	-
52	CDL	r	201	-	-	38/72/72/110	-
46	3PE	I	204	-	-	20/38/38/54	-
46	3PE	m	201	-	-	22/43/43/54	-
45	PC1	A	201	-	-	11/38/38/57	-
46	3PE	d	203	-	-	24/40/40/54	-
47	LMT	A	204	-	-	4/21/61/61	0/2/2/2
45	PC1	L	707	-	-	18/43/43/57	-
47	LMT	M	606	-	-	8/21/61/61	0/2/2/2
46	3PE	b	101	-	-	23/50/50/54	-
52	CDL	K	101	-	-	39/79/79/110	-
49	FES	E	301	5	-	-	0/1/1/1
47	LMT	L	705	-	-	13/21/61/61	0/2/2/2
48	SF4	F	502	6	-	-	0/6/5/5
46	3PE	M	602	-	-	29/54/54/54	-
47	LMT	p	201	-	-	10/21/61/61	0/2/2/2
47	LMT	M	605	-	-	8/21/61/61	0/2/2/2
46	3PE	d	201	-	-	27/51/51/54	-
54	DGT	O	402	53	-	5/22/34/34	0/3/3/3
46	3PE	N	402	-	-	29/54/54/54	-
48	SF4	I	202	9	-	-	0/6/5/5
52	CDL	d	202	-	-	36/83/83/110	-
45	PC1	B	202	-	-	13/44/44/57	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
47	LMT	i	201	-	-	11/21/61/61	0/2/2/2
52	CDL	h	201	-	-	45/88/88/110	-
48	SF4	B	201	2	-	-	0/6/5/5
48	SF4	G	801	7	-	-	0/6/5/5
57	EHZ	U	101	20	-	11/42/44/45	-
46	3PE	H	601	-	-	16/31/31/54	-
47	LMT	L	704	-	-	13/21/61/61	0/2/2/2
50	FMN	F	501	-	-	3/18/18/18	0/3/3/3
45	PC1	Z	200	-	-	24/51/51/57	-
45	PC1	d	204	-	-	18/36/36/57	-
55	NDP	P	401	-	-	7/34/77/77	0/5/5/5
58	MYR	o	201	40	-	4/11/12/13	-
46	3PE	L	701	-	-	25/42/42/54	-
45	PC1	A	203	-	-	20/36/36/57	-
45	PC1	M	604	-	-	28/45/45/57	-
46	3PE	I	201	-	-	17/41/41/54	-
46	3PE	A	202	-	-	17/40/40/54	-
49	FES	G	803	7	-	-	0/1/1/1

All (220) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
55	P	401	NDP	C6N-C5N	11.84	1.54	1.33
55	P	401	NDP	C2B-C1B	-8.83	1.30	1.53
55	P	401	NDP	C7N-N7N	8.01	1.54	1.33
55	P	401	NDP	O4B-C1B	7.96	1.60	1.42
55	P	401	NDP	O4D-C1D	7.92	1.60	1.42
54	O	402	DGT	C2'-C3'	-7.64	1.32	1.52
55	P	401	NDP	C2D-C1D	-7.31	1.30	1.53
55	P	401	NDP	O4D-C4D	-6.67	1.30	1.45
50	F	501	FMN	C4A-N5	6.50	1.43	1.30
54	O	402	DGT	C4-N3	6.19	1.49	1.34
50	F	501	FMN	C10-N1	6.02	1.45	1.33
55	P	401	NDP	O4B-C4B	-5.44	1.32	1.45
54	O	402	DGT	C2-N3	5.38	1.46	1.33
57	T	101	EHZ	C15-N2	5.37	1.45	1.33
57	U	101	EHZ	C15-N2	5.35	1.45	1.33
57	T	101	EHZ	C12-N1	5.30	1.45	1.33
54	O	402	DGT	O4'-C4'	5.28	1.56	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	O	402	DGT	O4'-C1'	-5.11	1.30	1.42
55	P	401	NDP	C6A-N6A	4.96	1.46	1.34
55	P	401	NDP	P2B-O2B	4.81	1.68	1.59
57	U	101	EHZ	C12-N1	4.80	1.44	1.33
55	P	401	NDP	C2N-C3N	4.69	1.48	1.34
54	O	402	DGT	C2-N2	4.47	1.44	1.34
50	F	501	FMN	C5A-N5	4.46	1.48	1.39
50	F	501	FMN	C9A-N10	4.33	1.48	1.41
55	P	401	NDP	C5A-C4A	-4.32	1.30	1.39
50	F	501	FMN	C2-N1	4.27	1.46	1.36
55	P	401	NDP	C8A-N9A	-4.25	1.29	1.37
55	P	401	NDP	O7N-C7N	-4.19	1.14	1.24
45	A	203	PC1	O31-C31	3.85	1.44	1.33
50	F	501	FMN	C2-N3	3.82	1.47	1.39
45	M	603	PC1	O31-C31	3.75	1.44	1.33
54	O	402	DGT	C5'-C4'	-3.75	1.39	1.51
54	O	402	DGT	C2'-C1'	3.74	1.62	1.52
45	M	604	PC1	O21-C21	3.74	1.44	1.34
50	F	501	FMN	O2-C2	-3.71	1.17	1.24
45	L	707	PC1	O31-C31	3.69	1.44	1.33
55	P	401	NDP	O2D-C2D	3.68	1.51	1.43
45	M	604	PC1	O31-C31	3.66	1.44	1.33
45	B	202	PC1	O21-C21	3.62	1.44	1.34
45	Z	200	PC1	O31-C31	3.55	1.43	1.33
45	d	204	PC1	O31-C31	3.54	1.43	1.33
47	M	606	LMT	O5B-C1B	3.45	1.50	1.41
47	i	201	LMT	O5'-C1'	3.44	1.50	1.41
45	M	603	PC1	O21-C21	3.38	1.43	1.34
47	L	704	LMT	O5'-C1'	3.38	1.50	1.41
45	A	201	PC1	O21-C21	3.38	1.43	1.34
45	B	203	PC1	O31-C31	3.34	1.43	1.33
47	p	201	LMT	O5'-C1'	3.33	1.50	1.41
45	L	707	PC1	O21-C21	3.33	1.43	1.34
47	Y	202	LMT	O5'-C1'	3.33	1.50	1.41
45	A	201	PC1	O31-C31	3.31	1.43	1.33
45	d	204	PC1	O21-C21	3.30	1.43	1.34
47	L	704	LMT	O5B-C1B	3.26	1.50	1.41
54	O	402	DGT	C5-N7	-3.26	1.32	1.39
45	B	202	PC1	O31-C31	3.24	1.42	1.33
45	Z	200	PC1	O21-C21	3.24	1.43	1.34
47	Y	202	LMT	O5B-C1B	3.21	1.50	1.41
47	L	705	LMT	O5'-C1'	3.20	1.50	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
50	F	501	FMN	C10-N10	3.20	1.44	1.37
55	P	401	NDP	C4N-C3N	3.18	1.56	1.49
45	A	203	PC1	O21-C21	3.18	1.43	1.34
47	M	605	LMT	O5'-C1'	3.18	1.49	1.41
47	M	605	LMT	O5B-C1B	3.17	1.49	1.41
47	i	201	LMT	O5B-C1B	3.16	1.49	1.41
50	F	501	FMN	C4-N3	3.15	1.44	1.38
55	P	401	NDP	C5A-N7A	-3.13	1.33	1.39
50	F	501	FMN	O4-C4	-3.12	1.17	1.23
47	L	705	LMT	O5B-C1B	3.06	1.49	1.41
47	M	606	LMT	O5'-C1'	3.03	1.49	1.41
45	B	203	PC1	O21-C21	3.01	1.42	1.34
45	Z	200	PC1	O21-C2	-3.00	1.39	1.46
46	M	602	3PE	O21-C2	-2.98	1.39	1.46
45	A	203	PC1	O21-C2	-2.97	1.39	1.46
47	p	201	LMT	O5B-C1B	2.97	1.49	1.41
47	A	204	LMT	O5'-C1'	2.95	1.49	1.41
45	B	203	PC1	O21-C2	-2.95	1.39	1.46
52	L	702	CDL	OA6-CA4	-2.94	1.39	1.46
46	M	601	3PE	O21-C2	-2.87	1.39	1.46
45	A	201	PC1	O21-C2	-2.85	1.39	1.46
45	d	204	PC1	O21-C2	-2.85	1.39	1.46
52	K	101	CDL	OA6-CA4	-2.84	1.39	1.46
45	M	603	PC1	O21-C2	-2.84	1.39	1.46
52	d	202	CDL	OA6-CA4	-2.83	1.39	1.46
52	N	401	CDL	OA6-CA4	-2.81	1.39	1.46
52	d	205	CDL	OA6-CA4	-2.80	1.39	1.46
45	L	707	PC1	O21-C2	-2.78	1.39	1.46
52	h	201	CDL	OB6-CB4	-2.78	1.39	1.46
55	P	401	NDP	O3D-C3D	-2.77	1.36	1.43
52	r	201	CDL	OA6-CA4	-2.74	1.39	1.46
52	h	201	CDL	OA6-CA4	-2.73	1.39	1.46
52	N	401	CDL	OB8-CB7	2.72	1.41	1.33
52	H	602	CDL	OB6-CB4	-2.71	1.39	1.46
46	L	701	3PE	O31-C3	-2.71	1.39	1.45
52	r	201	CDL	OA8-CA6	-2.71	1.39	1.45
52	K	101	CDL	OA8-CA6	-2.71	1.39	1.45
47	A	204	LMT	O5B-C1B	2.70	1.48	1.41
46	I	201	3PE	O21-C2	-2.69	1.39	1.46
46	L	703	3PE	O21-C2	-2.69	1.39	1.46
52	K	101	CDL	OB8-CB7	2.68	1.41	1.33
46	d	203	3PE	O21-C2	-2.66	1.39	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
52	L	702	CDL	OB6-CB4	-2.66	1.39	1.46
46	H	601	3PE	O21-C2	-2.65	1.40	1.46
55	P	401	NDP	O3B-C3B	-2.64	1.36	1.43
46	M	602	3PE	O31-C3	-2.64	1.39	1.45
57	T	101	EHZ	O4-C15	-2.63	1.18	1.23
52	L	702	CDL	OB8-CB7	2.62	1.41	1.33
52	r	201	CDL	OB6-CB4	-2.62	1.40	1.46
46	M	601	3PE	O31-C3	-2.62	1.39	1.45
46	L	706	3PE	O31-C31	2.62	1.41	1.33
52	d	202	CDL	OB8-CB7	2.62	1.41	1.33
52	d	205	CDL	OB8-CB7	2.60	1.40	1.33
46	b	101	3PE	O21-C2	-2.60	1.40	1.46
54	O	402	DGT	O6-C6	-2.59	1.18	1.23
57	T	101	EHZ	O3-C12	-2.59	1.18	1.23
46	L	703	3PE	O31-C3	-2.57	1.39	1.45
46	L	706	3PE	O21-C2	-2.56	1.40	1.46
46	I	204	3PE	O21-C2	-2.55	1.40	1.46
46	d	201	3PE	O21-C2	-2.55	1.40	1.46
57	U	101	EHZ	O3-C12	-2.54	1.18	1.23
46	A	202	3PE	O31-C31	2.54	1.40	1.33
55	P	401	NDP	C4N-C5N	2.54	1.55	1.48
45	B	202	PC1	O21-C2	-2.54	1.40	1.46
52	d	202	CDL	OB6-CB4	-2.54	1.40	1.46
52	d	205	CDL	OA8-CA6	-2.54	1.39	1.45
52	N	401	CDL	OB6-CB5	2.53	1.40	1.35
46	I	201	3PE	O31-C3	-2.51	1.39	1.45
46	A	202	3PE	O21-C2	-2.50	1.40	1.46
46	Y	201	3PE	O21-C2	-2.50	1.40	1.46
46	Y	201	3PE	O31-C31	2.50	1.40	1.33
52	r	201	CDL	OB8-CB7	2.48	1.40	1.33
52	K	101	CDL	OB6-CB5	2.48	1.41	1.34
46	m	201	3PE	O21-C2	-2.48	1.40	1.46
45	Z	200	PC1	P-O11	2.47	1.69	1.59
54	O	402	DGT	C2-N1	2.46	1.43	1.37
52	d	205	CDL	OB6-CB4	-2.46	1.40	1.46
57	U	101	EHZ	O4-C15	-2.46	1.18	1.23
54	O	402	DGT	O3'-C3'	2.44	1.48	1.43
52	N	401	CDL	OA8-CA7	2.43	1.40	1.33
46	m	201	3PE	O31-C31	2.42	1.40	1.33
46	d	203	3PE	O31-C31	2.41	1.40	1.33
46	I	204	3PE	O31-C31	2.41	1.40	1.33
46	b	101	3PE	O31-C31	2.41	1.40	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
52	d	202	CDL	OA8-CA7	2.39	1.40	1.33
52	H	602	CDL	OA8-CA6	-2.39	1.39	1.45
52	L	702	CDL	OA8-CA7	2.39	1.40	1.33
52	d	205	CDL	OB6-CB5	2.38	1.41	1.34
52	K	101	CDL	OB6-CB4	-2.38	1.40	1.46
52	d	202	CDL	OB6-CB5	2.38	1.41	1.34
52	L	702	CDL	OB6-CB5	2.37	1.41	1.34
46	L	701	3PE	O21-C21	2.36	1.41	1.34
45	B	202	PC1	C22-C21	2.34	1.57	1.50
54	O	402	DGT	C5-C6	2.34	1.53	1.44
52	h	201	CDL	OB8-CB7	2.34	1.40	1.33
52	h	201	CDL	OB6-CB5	2.33	1.40	1.34
52	H	602	CDL	OA8-CA7	2.33	1.40	1.33
46	d	201	3PE	O31-C31	2.32	1.40	1.33
46	N	402	3PE	O31-C31	2.32	1.40	1.33
46	m	201	3PE	O21-C21	2.32	1.40	1.34
46	L	701	3PE	O21-C2	-2.31	1.40	1.46
52	H	602	CDL	OA6-CA4	-2.30	1.40	1.46
52	N	401	CDL	OB6-CB4	-2.30	1.40	1.46
52	N	401	CDL	OA8-CA6	-2.27	1.40	1.45
45	M	604	PC1	P-O11	2.26	1.68	1.59
46	H	601	3PE	O31-C3	-2.26	1.40	1.45
52	H	602	CDL	OB8-CB7	2.26	1.39	1.33
45	M	604	PC1	C22-C21	2.25	1.57	1.50
52	L	702	CDL	OA8-CA6	-2.25	1.40	1.45
52	h	201	CDL	OA8-CA7	2.25	1.39	1.33
46	I	204	3PE	O31-C3	-2.25	1.40	1.45
55	P	401	NDP	C6N-N1N	2.25	1.42	1.37
45	L	707	PC1	P-O11	2.24	1.68	1.59
52	h	201	CDL	OA8-CA6	-2.23	1.40	1.45
46	m	201	3PE	O31-C3	-2.23	1.40	1.45
45	Z	200	PC1	C14-N	-2.22	1.43	1.50
46	I	201	3PE	O31-C31	2.21	1.39	1.33
55	P	401	NDP	C7N-C3N	2.20	1.53	1.48
54	O	402	DGT	C6-N1	2.19	1.42	1.38
45	M	603	PC1	P-O11	2.19	1.68	1.59
45	d	204	PC1	C22-C21	2.18	1.57	1.50
46	I	204	3PE	O21-C21	2.18	1.40	1.34
52	h	201	CDL	OA6-CA5	2.17	1.40	1.34
57	T	101	EHZ	C9-S1	2.16	1.81	1.76
46	A	202	3PE	O31-C3	-2.16	1.40	1.45
52	H	602	CDL	OB6-CB5	2.14	1.40	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
52	d	202	CDL	OA8-CA6	-2.14	1.40	1.45
46	N	402	3PE	O21-C21	2.13	1.40	1.34
46	N	402	3PE	O31-C3	-2.13	1.40	1.45
45	M	604	PC1	O21-C2	-2.13	1.41	1.46
57	U	101	EHZ	C9-S1	2.13	1.81	1.76
52	r	201	CDL	OB6-CB5	2.13	1.40	1.34
45	M	603	PC1	C22-C21	2.13	1.56	1.50
52	h	201	CDL	OB8-CB6	-2.12	1.40	1.45
55	P	401	NDP	P2B-O3X	-2.12	1.46	1.54
52	r	201	CDL	OB8-CB6	-2.11	1.40	1.45
52	r	201	CDL	OA6-CA5	2.11	1.40	1.34
46	b	101	3PE	O31-C3	-2.10	1.40	1.45
46	d	201	3PE	O31-C3	-2.10	1.40	1.45
46	N	402	3PE	O21-C2	-2.09	1.41	1.46
45	A	203	PC1	C14-N	-2.09	1.43	1.50
45	A	203	PC1	C22-C21	2.09	1.56	1.50
45	L	707	PC1	P-O13	2.08	1.67	1.59
46	L	703	3PE	O31-C31	2.07	1.39	1.33
46	L	706	3PE	O21-C21	2.07	1.40	1.34
52	H	602	CDL	OA6-CA5	2.07	1.40	1.34
46	I	201	3PE	O21-C21	2.06	1.40	1.34
45	A	201	PC1	C22-C21	2.06	1.56	1.50
52	d	202	CDL	OB8-CB6	-2.06	1.40	1.45
46	A	202	3PE	O21-C21	2.05	1.40	1.34
47	L	705	LMT	O1B-C1B	-2.05	1.36	1.41
45	Z	200	PC1	C22-C21	2.04	1.56	1.50
54	O	402	DGT	C4-N9	-2.04	1.32	1.38
52	d	205	CDL	OB8-CB6	-2.04	1.40	1.45
55	P	401	NDP	PA-O5B	2.03	1.67	1.59
46	Y	201	3PE	O31-C3	-2.03	1.40	1.45
46	d	201	3PE	O21-C21	2.02	1.40	1.34
46	d	203	3PE	O31-C3	-2.02	1.40	1.45
46	M	601	3PE	O31-C31	2.01	1.39	1.33
45	M	604	PC1	P-O13	2.01	1.67	1.59
52	H	602	CDL	OB8-CB6	-2.01	1.40	1.45

All (179) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	T	101	EHZ	C8-C9-S1	8.31	123.92	113.63
55	P	401	NDP	C5A-C4A-N3A	-5.87	119.09	126.75
54	O	402	DGT	C1'-N9-C8	5.66	140.54	127.85

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
55	P	401	NDP	N6A-C6A-N1A	-5.62	106.05	118.35
57	U	101	EHZ	C8-C9-S1	5.59	120.55	113.63
54	O	402	DGT	C5-C4-N3	-5.28	119.89	128.46
54	O	402	DGT	C1'-N9-C4	-5.19	111.10	125.48
52	h	201	CDL	OA6-CA5-C11	5.16	122.63	111.50
55	P	401	NDP	N3A-C2A-N1A	-5.16	120.53	128.60
50	F	501	FMN	C9-C8-C7	5.10	126.98	119.67
52	H	602	CDL	OA6-CA5-C11	5.06	122.40	111.50
52	N	401	CDL	OB6-CB5-C51	5.04	120.36	111.09
46	L	701	3PE	O21-C21-C22	5.03	122.34	111.50
57	T	101	EHZ	C11-N1-C12	-4.79	113.94	122.84
47	L	705	LMT	C1B-O1B-C4'	-4.67	106.40	117.96
46	b	101	3PE	O21-C21-C22	4.64	121.51	111.50
55	P	401	NDP	C5A-C6A-N6A	4.54	133.31	123.43
52	h	201	CDL	OB6-CB5-C51	4.52	121.24	111.50
46	H	601	3PE	O21-C21-C22	4.51	121.22	111.50
52	r	201	CDL	OA6-CA5-C11	4.50	121.20	111.50
46	m	201	3PE	O21-C21-C22	4.50	121.20	111.50
46	d	201	3PE	O21-C21-C22	4.50	121.20	111.50
50	F	501	FMN	C7M-C7-C6	4.50	127.80	119.49
52	H	602	CDL	OB6-CB5-C51	4.41	121.01	111.50
45	M	604	PC1	O21-C21-C22	4.40	120.99	111.50
46	Y	201	3PE	O21-C21-C22	4.36	120.89	111.50
46	I	204	3PE	O21-C21-C22	4.32	120.81	111.50
45	B	202	PC1	O21-C21-C22	4.32	120.81	111.50
45	d	204	PC1	O21-C21-C22	4.32	120.80	111.50
52	d	205	CDL	OA6-CA5-C11	4.28	120.72	111.50
55	P	401	NDP	C2B-C1B-N9A	-4.27	106.34	113.53
54	O	402	DGT	C2-N3-C4	4.21	119.80	112.30
46	A	202	3PE	O21-C21-C22	4.19	120.54	111.50
55	P	401	NDP	N3A-C4A-N9A	4.19	133.99	127.08
52	r	201	CDL	OB6-CB5-C51	4.18	120.51	111.50
52	d	202	CDL	OB6-CB5-C51	4.17	120.48	111.50
45	A	203	PC1	O21-C21-C22	4.16	120.47	111.50
46	d	203	3PE	O21-C21-C22	4.14	120.42	111.50
55	P	401	NDP	N9A-C8A-N7A	-4.11	108.29	113.91
52	L	702	CDL	OB6-CB5-C51	4.09	120.31	111.50
52	L	702	CDL	OA6-CA5-C11	4.06	120.25	111.50
45	B	203	PC1	O21-C21-C22	4.06	120.25	111.50
50	F	501	FMN	C8M-C8-C7	-4.01	112.52	120.74
46	L	706	3PE	O21-C21-C22	3.99	120.10	111.50
46	I	201	3PE	O21-C21-C22	3.93	119.97	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
52	K	101	CDL	OA6-CA5-C11	3.91	119.92	111.50
47	p	201	LMT	C1B-O1B-C4'	-3.90	108.32	117.96
55	P	401	NDP	C4A-N9A-C1B	-3.89	117.31	126.59
46	M	601	3PE	O21-C21-C22	3.88	119.87	111.50
57	T	101	EHZ	C7-C8-C9	-3.88	105.04	113.89
52	K	101	CDL	OB6-CB5-C51	3.83	119.76	111.50
52	N	401	CDL	OA6-CA5-C11	3.80	119.70	111.50
45	Z	200	PC1	O21-C21-C22	3.79	119.67	111.50
46	M	602	3PE	O21-C21-C22	3.76	119.61	111.50
45	A	201	PC1	O21-C21-C22	3.74	119.57	111.50
57	U	101	EHZ	C11-N1-C12	-3.72	115.94	122.84
55	P	401	NDP	C2A-N3A-C4A	3.71	120.52	111.75
57	T	101	EHZ	C13-C12-N1	3.62	122.51	116.42
46	L	703	3PE	O21-C21-C22	3.60	119.26	111.50
52	r	201	CDL	OB8-CB7-C71	3.58	120.77	111.38
45	M	603	PC1	O31-C31-C32	3.53	120.63	111.38
50	F	501	FMN	C4-N3-C2	-3.51	119.16	125.64
46	N	402	3PE	O21-C21-C22	3.47	118.98	111.50
47	p	201	LMT	C3B-C4B-C5B	3.43	116.35	110.24
52	d	202	CDL	OA6-CA5-C11	3.43	118.88	111.50
57	U	101	EHZ	C13-C12-N1	3.41	122.16	116.42
52	d	205	CDL	OB6-CB5-C51	3.40	120.28	110.80
55	P	401	NDP	C5A-N7A-C8A	3.33	108.24	103.51
54	O	402	DGT	C2-N1-C6	-3.33	119.03	125.10
45	L	707	PC1	O21-C21-C22	3.26	118.53	111.50
55	P	401	NDP	C1B-N9A-C8A	3.24	134.44	127.14
45	Z	200	PC1	C11-C12-N	-3.21	105.05	115.78
54	O	402	DGT	N9-C4-N3	3.20	132.37	125.94
45	M	603	PC1	O21-C21-C22	3.20	118.40	111.50
47	M	605	LMT	C1B-O1B-C4'	-3.19	110.06	117.96
45	Z	200	PC1	O31-C31-C32	3.17	121.84	111.91
46	m	201	3PE	O31-C31-C32	3.16	121.83	111.91
52	N	401	CDL	OB8-CB7-C71	3.10	121.64	111.91
46	L	706	3PE	O31-C31-C32	3.09	121.62	111.91
47	A	204	LMT	C1B-O1B-C4'	-3.07	110.37	117.96
47	Y	202	LMT	O1B-C1B-C2B	3.04	115.99	108.10
57	T	101	EHZ	O2-C9-S1	-3.00	118.71	122.61
52	K	101	CDL	OB8-CB7-C71	2.99	121.31	111.91
46	L	701	3PE	O31-C31-C32	2.99	121.28	111.91
54	O	402	DGT	N9-C8-N7	-2.95	107.83	113.39
52	N	401	CDL	OA8-CA7-C31	2.95	121.15	111.91
45	Z	200	PC1	P-O13-C11	-2.94	107.11	121.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	T	101	EHZ	C14-C13-C12	-2.94	107.47	112.36
46	Y	201	3PE	O31-C31-C32	2.93	121.11	111.91
46	b	101	3PE	O31-C31-C32	2.92	121.08	111.91
50	F	501	FMN	C6-C5A-C9A	2.89	123.02	118.94
46	M	602	3PE	O31-C31-C32	2.87	120.92	111.91
46	A	202	3PE	O31-C31-C32	2.81	120.74	111.91
52	h	201	CDL	OB8-CB7-C71	2.81	120.73	111.91
46	d	203	3PE	O31-C31-C32	2.77	120.61	111.91
46	M	601	3PE	O31-C31-C32	2.77	120.61	111.91
52	r	201	CDL	OA8-CA7-C31	2.77	120.60	111.91
47	p	201	LMT	O5B-C5B-C4B	2.77	114.72	109.69
45	A	201	PC1	O31-C31-C32	2.77	120.59	111.91
45	A	203	PC1	O31-C31-C32	2.76	120.56	111.91
46	I	204	3PE	O31-C31-C32	2.74	120.51	111.91
54	O	402	DGT	C5-C6-N1	2.72	120.11	113.19
52	d	205	CDL	OB8-CB7-C71	2.72	120.44	111.91
52	d	202	CDL	OA8-CA7-C31	2.71	120.42	111.91
50	F	501	FMN	C7M-C7-C8	-2.71	115.19	120.74
47	Y	202	LMT	O5B-C5B-C4B	2.70	114.60	109.69
54	O	402	DGT	PB-O3B-PG	-2.70	123.57	132.83
52	d	202	CDL	OB8-CB7-C71	2.69	120.36	111.91
47	M	606	LMT	C1B-O1B-C4'	-2.67	111.36	117.96
47	L	704	LMT	C3B-C4B-C5B	2.66	114.99	110.24
46	N	402	3PE	O31-C31-C32	2.66	120.25	111.91
46	L	701	3PE	C3-C2-C1	-2.66	105.50	111.79
50	F	501	FMN	C4A-C10-N10	2.63	120.33	116.48
52	L	702	CDL	OA8-CA7-C31	2.62	120.13	111.91
47	L	704	LMT	C1B-O1B-C4'	-2.61	111.50	117.96
50	F	501	FMN	C4-C4A-C10	2.59	121.15	116.79
45	M	604	PC1	O31-C31-C32	2.58	120.02	111.91
54	O	402	DGT	O6-C6-C5	-2.58	119.75	126.60
50	F	501	FMN	O4-C4-C4A	-2.56	119.81	126.60
57	T	101	EHZ	C10-S1-C9	2.55	109.82	101.87
47	Y	202	LMT	C1'-C2'-C3'	2.51	115.23	110.00
45	B	202	PC1	O31-C31-C32	2.51	119.78	111.91
52	h	201	CDL	OA8-CA7-C31	2.50	119.74	111.91
52	d	205	CDL	OA8-CA7-C31	2.48	119.68	111.91
50	F	501	FMN	C5'-C4'-C3'	-2.47	107.43	112.20
45	d	204	PC1	O31-C31-C32	2.47	119.65	111.91
47	A	204	LMT	C1B-O5B-C5B	-2.47	108.85	113.69
47	Y	202	LMT	C3B-C4B-C5B	2.46	114.64	110.24
47	Y	202	LMT	C2'-C3'-C4'	2.44	115.25	109.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
52	L	702	CDL	OB8-CB7-C71	2.43	119.54	111.91
45	B	203	PC1	O31-C31-C32	2.42	119.50	111.91
57	U	101	EHZ	O3-C12-N1	-2.42	118.46	123.01
50	F	501	FMN	C4A-C4-N3	2.40	119.28	113.19
46	L	703	3PE	O31-C31-C32	2.39	119.42	111.91
52	K	101	CDL	OA8-CA7-C31	2.39	119.41	111.91
54	O	402	DGT	PA-O3A-PB	-2.39	124.64	132.83
45	L	707	PC1	O31-C31-C32	2.38	119.39	111.91
57	T	101	EHZ	O3-C12-N1	-2.37	118.54	123.01
57	U	101	EHZ	C7-C8-C9	-2.37	108.48	113.89
57	U	101	EHZ	C5-C6-C7	-2.37	108.04	114.85
55	P	401	NDP	C6A-C5A-C4A	2.35	120.34	117.18
52	h	201	CDL	CB6-CB4-CB3	-2.34	106.25	111.79
45	A	201	PC1	O31-C31-O32	-2.34	117.70	123.59
52	d	202	CDL	CB4-OB6-CB5	-2.33	112.05	117.79
57	U	101	EHZ	C10-C11-N1	-2.33	107.52	112.42
57	U	101	EHZ	O2-C9-S1	-2.33	119.59	122.61
46	d	201	3PE	O31-C31-C32	2.32	119.20	111.91
46	M	602	3PE	C3-O31-C31	-2.31	108.55	117.12
55	P	401	NDP	C4A-N9A-C8A	2.30	108.22	105.73
52	H	602	CDL	OA8-CA7-C31	2.30	119.12	111.91
55	P	401	NDP	PN-O3-PA	-2.28	125.00	132.83
50	F	501	FMN	C9A-C5A-N5	-2.28	119.95	122.43
57	T	101	EHZ	C13-C14-N2	-2.27	107.32	111.90
50	F	501	FMN	C5A-C9A-N10	2.26	120.29	117.95
52	r	201	CDL	CA6-CA4-CA3	-2.26	106.45	111.79
52	H	602	CDL	OB8-CB7-C71	2.23	118.92	111.91
46	H	601	3PE	C2-O21-C21	-2.20	112.37	117.79
45	B	203	PC1	C2-O21-C21	-2.16	112.48	117.79
46	I	201	3PE	O31-C31-C32	2.15	118.66	111.91
52	H	602	CDL	CB2-C1-CA2	-2.15	106.46	112.79
50	F	501	FMN	C9A-C9-C8	-2.15	114.99	119.30
45	Z	200	PC1	C2-O21-C21	-2.14	112.53	117.79
47	L	704	LMT	C4B-C3B-C2B	2.13	114.55	110.82
50	F	501	FMN	C4A-C10-N1	-2.13	119.78	124.73
46	I	201	3PE	C3-C2-C1	-2.13	106.76	111.79
54	O	402	DGT	C8-N7-C5	2.11	108.07	104.24
52	H	602	CDL	OB6-CB5-OB7	-2.11	118.59	123.70
47	Y	202	LMT	O2B-C2B-C3B	-2.10	105.50	110.35
47	Y	202	LMT	C6B-C5B-C4B	-2.09	108.10	113.00
46	b	101	3PE	C2-O21-C21	-2.09	112.64	117.79
47	M	606	LMT	C3B-C4B-C5B	2.09	113.97	110.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
52	H	602	CDL	OA6-CA5-OA7	-2.09	118.66	123.70
47	L	704	LMT	O5B-C5B-C4B	2.05	113.42	109.69
57	U	101	EHZ	C16-C15-N2	2.05	120.65	116.58
46	H	601	3PE	O21-C21-O22	-2.04	118.77	123.70
57	U	101	EHZ	C10-S1-C9	2.04	108.23	101.87
57	T	101	EHZ	C19-C17-C16	2.04	112.36	108.82
54	O	402	DGT	C2'-C3'-C4'	2.03	106.99	102.76
47	Y	202	LMT	O5'-C1'-C2'	2.00	114.59	110.35

There are no chirality outliers.

All (926) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
45	A	201	PC1	O11-C1-C2-O21
45	A	203	PC1	C22-C21-O21-C2
45	A	203	PC1	O32-C31-O31-C3
45	A	203	PC1	C32-C31-O31-C3
45	B	202	PC1	C22-C21-O21-C2
45	B	203	PC1	C11-O13-P-O12
45	B	203	PC1	C11-O13-P-O14
45	L	707	PC1	C2-C1-O11-P
45	L	707	PC1	O32-C31-O31-C3
45	L	707	PC1	C32-C31-O31-C3
45	M	603	PC1	O32-C31-O31-C3
45	M	603	PC1	C32-C31-O31-C3
45	M	604	PC1	C11-O13-P-O14
45	M	604	PC1	C1-O11-P-O12
45	M	604	PC1	C1-O11-P-O13
45	M	604	PC1	C22-C21-O21-C2
45	Z	200	PC1	C11-O13-P-O14
45	Z	200	PC1	C11-O13-P-O11
45	Z	200	PC1	C1-O11-P-O14
45	Z	200	PC1	C2-C1-O11-P
45	d	204	PC1	C1-O11-P-O12
45	d	204	PC1	C1-O11-P-O14
46	A	202	3PE	C1-O11-P-O12
46	A	202	3PE	C1-O11-P-O13
46	A	202	3PE	C1-O11-P-O14
46	A	202	3PE	O32-C31-O31-C3
46	A	202	3PE	C32-C31-O31-C3
46	A	202	3PE	O22-C21-O21-C2
46	H	601	3PE	C11-O13-P-O12

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Mol	Chain	Res	Type	Atoms
46	H	601	3PE	C11-O13-P-O14
46	H	601	3PE	O13-C11-C12-N
46	H	601	3PE	O21-C2-C3-O31
46	I	201	3PE	C1-O11-P-O14
46	I	201	3PE	O13-C11-C12-N
46	I	204	3PE	C1-O11-P-O12
46	I	204	3PE	O13-C11-C12-N
46	I	204	3PE	O21-C2-C3-O31
46	L	701	3PE	C1-O11-P-O12
46	L	701	3PE	C1-O11-P-O14
46	L	701	3PE	O13-C11-C12-N
46	L	701	3PE	C22-C21-O21-C2
46	L	703	3PE	O13-C11-C12-N
46	L	706	3PE	C1-O11-P-O12
46	L	706	3PE	O13-C11-C12-N
46	M	601	3PE	C1-O11-P-O12
46	M	601	3PE	C1-O11-P-O13
46	M	601	3PE	C1-O11-P-O14
46	M	601	3PE	C11-O13-P-O11
46	M	601	3PE	C11-O13-P-O12
46	M	601	3PE	C11-O13-P-O14
46	M	601	3PE	O13-C11-C12-N
46	M	602	3PE	C1-O11-P-O14
46	N	402	3PE	C1-O11-P-O12
46	N	402	3PE	C1-O11-P-O14
46	N	402	3PE	O13-C11-C12-N
46	Y	201	3PE	C1-O11-P-O12
46	Y	201	3PE	C1-O11-P-O14
46	b	101	3PE	C1-O11-P-O13
46	b	101	3PE	O13-C11-C12-N
46	d	201	3PE	C1-O11-P-O14
46	d	201	3PE	O13-C11-C12-N
46	d	201	3PE	O32-C31-O31-C3
46	d	201	3PE	C32-C31-O31-C3
46	d	201	3PE	C22-C21-O21-C2
46	d	203	3PE	C1-O11-P-O12
46	d	203	3PE	C1-O11-P-O14
46	d	203	3PE	O13-C11-C12-N
46	m	201	3PE	C11-O13-P-O11
46	m	201	3PE	C11-O13-P-O14
46	m	201	3PE	C12-C11-O13-P
46	m	201	3PE	O13-C11-C12-N

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Mol	Chain	Res	Type	Atoms
46	m	201	3PE	O22-C21-O21-C2
46	m	201	3PE	C22-C21-O21-C2
47	L	704	LMT	C2'-C1'-O1'-C1
47	L	705	LMT	O5'-C1'-O1'-C1
47	L	705	LMT	C2-C1-O1'-C1'
47	M	605	LMT	C2'-C1'-O1'-C1
47	M	605	LMT	O5'-C1'-O1'-C1
47	M	605	LMT	C2-C1-O1'-C1'
52	H	602	CDL	CA2-OA2-PA1-OA3
52	H	602	CDL	CA2-OA2-PA1-OA4
52	H	602	CDL	OA7-CA5-OA6-CA4
52	H	602	CDL	C11-CA5-OA6-CA4
52	H	602	CDL	CB2-OB2-PB2-OB3
52	H	602	CDL	OB7-CB5-OB6-CB4
52	H	602	CDL	C51-CB5-OB6-CB4
52	K	101	CDL	CB2-OB2-PB2-OB4
52	K	101	CDL	OB7-CB5-OB6-CB4
52	K	101	CDL	C51-CB5-OB6-CB4
52	L	702	CDL	CA2-OA2-PA1-OA3
52	L	702	CDL	CA2-OA2-PA1-OA4
52	L	702	CDL	OA5-CA3-CA4-OA6
52	L	702	CDL	C31-CA7-OA8-CA6
52	L	702	CDL	CB2-OB2-PB2-OB3
52	L	702	CDL	CB2-OB2-PB2-OB4
52	L	702	CDL	CB2-OB2-PB2-OB5
52	N	401	CDL	C1-CA2-OA2-PA1
52	N	401	CDL	CA2-OA2-PA1-OA3
52	N	401	CDL	CA2-OA2-PA1-OA4
52	N	401	CDL	OA6-CA4-CA6-OA8
52	N	401	CDL	OA7-CA5-OA6-CA4
52	N	401	CDL	C11-CA5-OA6-CA4
52	N	401	CDL	CB2-OB2-PB2-OB4
52	d	202	CDL	CA2-OA2-PA1-OA3
52	d	202	CDL	CA2-OA2-PA1-OA4
52	d	202	CDL	CB2-OB2-PB2-OB3
52	d	202	CDL	CB2-OB2-PB2-OB4
52	d	205	CDL	CA2-OA2-PA1-OA3
52	d	205	CDL	CA2-OA2-PA1-OA4
52	d	205	CDL	CB2-OB2-PB2-OB3
52	d	205	CDL	CB2-OB2-PB2-OB4
52	d	205	CDL	OB7-CB5-OB6-CB4
52	d	205	CDL	C51-CB5-OB6-CB4

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Mol	Chain	Res	Type	Atoms
52	h	201	CDL	CA2-OA2-PA1-OA3
52	h	201	CDL	CA2-OA2-PA1-OA4
52	h	201	CDL	OA5-CA3-CA4-OA6
52	h	201	CDL	OA7-CA5-OA6-CA4
52	h	201	CDL	C11-CA5-OA6-CA4
52	h	201	CDL	CB2-OB2-PB2-OB3
52	h	201	CDL	CB2-OB2-PB2-OB4
52	h	201	CDL	OB7-CB5-OB6-CB4
52	h	201	CDL	C51-CB5-OB6-CB4
52	r	201	CDL	CA2-OA2-PA1-OA3
52	r	201	CDL	CA2-OA2-PA1-OA4
52	r	201	CDL	CA3-OA5-PA1-OA3
52	r	201	CDL	CB2-OB2-PB2-OB5
52	r	201	CDL	CB3-OB5-PB2-OB3
52	r	201	CDL	OB6-CB4-CB6-OB8
54	O	402	DGT	PB-O3B-PG-O1G
55	P	401	NDP	C5B-O5B-PA-O1A
55	P	401	NDP	O4B-C4B-C5B-O5B
55	P	401	NDP	C2B-O2B-P2B-O1X
57	T	101	EHZ	O1-C7-C8-C9
57	T	101	EHZ	C6-C7-C8-C9
57	T	101	EHZ	C11-C10-S1-C9
57	T	101	EHZ	C12-C13-C14-N2
57	T	101	EHZ	C15-C16-C17-C20
57	T	101	EHZ	O5-C16-C17-C20
57	T	101	EHZ	O2-C9-S1-C10
57	T	101	EHZ	C8-C9-S1-C10
57	U	101	EHZ	S1-C10-C11-N1
57	U	101	EHZ	N2-C15-C16-O5
57	U	101	EHZ	O4-C15-C16-O5
57	U	101	EHZ	O2-C9-S1-C10
57	U	101	EHZ	C8-C9-S1-C10
52	N	401	CDL	C51-CB5-OB6-CB4
47	M	606	LMT	O5B-C1B-O1B-C4'
46	M	601	3PE	O32-C31-O31-C3
46	N	402	3PE	O32-C31-O31-C3
46	Y	201	3PE	O32-C31-O31-C3
52	L	702	CDL	OA9-CA7-OA8-CA6
52	N	401	CDL	OA9-CA7-OA8-CA6
52	d	202	CDL	OB9-CB7-OB8-CB6
52	d	205	CDL	OB9-CB7-OB8-CB6
52	h	201	CDL	OA9-CA7-OA8-CA6

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Mol	Chain	Res	Type	Atoms
47	Y	202	LMT	C2B-C1B-O1B-C4'
47	i	201	LMT	O5B-C1B-O1B-C4'
46	M	601	3PE	C32-C31-O31-C3
46	N	402	3PE	C32-C31-O31-C3
52	N	401	CDL	C31-CA7-OA8-CA6
52	d	202	CDL	C71-CB7-OB8-CB6
52	h	201	CDL	C31-CA7-OA8-CA6
46	H	601	3PE	O32-C31-O31-C3
45	M	604	PC1	O32-C31-O31-C3
45	d	204	PC1	O32-C31-O31-C3
46	L	701	3PE	O32-C31-O31-C3
46	L	706	3PE	O32-C31-O31-C3
46	d	203	3PE	O32-C31-O31-C3
46	m	201	3PE	O32-C31-O31-C3
52	N	401	CDL	OB9-CB7-OB8-CB6
52	r	201	CDL	OA9-CA7-OA8-CA6
52	N	401	CDL	OB7-CB5-OB6-CB4
45	A	203	PC1	O22-C21-O21-C2
45	B	202	PC1	O22-C21-O21-C2
46	d	201	3PE	O22-C21-O21-C2
46	M	602	3PE	O32-C31-O31-C3
45	M	604	PC1	C32-C31-O31-C3
45	d	204	PC1	C32-C31-O31-C3
46	Y	201	3PE	C32-C31-O31-C3
46	m	201	3PE	C32-C31-O31-C3
52	N	401	CDL	C71-CB7-OB8-CB6
52	d	205	CDL	C71-CB7-OB8-CB6
47	L	705	LMT	O5'-C5'-C6'-O6'
46	A	202	3PE	C22-C21-O21-C2
47	Y	202	LMT	O5B-C5B-C6B-O6B
47	L	704	LMT	C4B-C5B-C6B-O6B
46	H	601	3PE	C32-C31-O31-C3
46	L	701	3PE	C32-C31-O31-C3
46	L	706	3PE	C32-C31-O31-C3
46	M	602	3PE	C32-C31-O31-C3
46	d	203	3PE	C32-C31-O31-C3
52	r	201	CDL	C31-CA7-OA8-CA6
47	M	605	LMT	O5'-C5'-C6'-O6'
45	M	604	PC1	O22-C21-O21-C2
46	L	701	3PE	O22-C21-O21-C2
46	I	204	3PE	O32-C31-O31-C3
46	b	101	3PE	O32-C31-O31-C3

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Mol	Chain	Res	Type	Atoms
52	H	602	CDL	O1-C1-CB2-OB2
52	K	101	CDL	O1-C1-CB2-OB2
52	L	702	CDL	O1-C1-CB2-OB2
52	h	201	CDL	OB9-CB7-OB8-CB6
46	N	402	3PE	C22-C21-O21-C2
47	M	605	LMT	O5B-C5B-C6B-O6B
47	i	201	LMT	O5'-C5'-C6'-O6'
47	M	605	LMT	C4'-C5'-C6'-O6'
47	Y	202	LMT	C4B-C5B-C6B-O6B
47	L	705	LMT	C4'-C5'-C6'-O6'
47	M	605	LMT	C4B-C5B-C6B-O6B
46	I	204	3PE	C32-C31-O31-C3
46	b	101	3PE	C32-C31-O31-C3
52	h	201	CDL	C71-CB7-OB8-CB6
47	A	204	LMT	O5'-C5'-C6'-O6'
47	L	704	LMT	O5B-C5B-C6B-O6B
47	L	704	LMT	C4'-C5'-C6'-O6'
47	Y	202	LMT	C4'-C5'-C6'-O6'
45	Z	200	PC1	C23-C24-C25-C26
47	L	704	LMT	O5'-C1'-O1'-C1
45	d	204	PC1	C36-C37-C38-C39
46	I	204	3PE	C32-C33-C34-C35
47	Y	202	LMT	C3-C4-C5-C6
52	L	702	CDL	CA2-C1-CB2-OB2
52	N	401	CDL	C18-C19-C20-C21
45	Z	200	PC1	C33-C34-C35-C36
46	M	601	3PE	C29-C2A-C2B-C2C
52	d	205	CDL	C71-C72-C73-C74
52	H	602	CDL	OB5-CB3-CB4-OB6
52	N	401	CDL	O1-C1-CB2-OB2
52	L	702	CDL	CA7-C31-C32-C33
47	L	705	LMT	C2'-C1'-O1'-C1
52	r	201	CDL	OA6-CA4-CA6-OA8
47	Y	202	LMT	O5'-C5'-C6'-O6'
46	N	402	3PE	O22-C21-O21-C2
52	d	202	CDL	C51-CB5-OB6-CB4
45	A	201	PC1	C32-C33-C34-C35
46	I	201	3PE	C21-C22-C23-C24
52	h	201	CDL	CB5-C51-C52-C53
47	L	704	LMT	O5'-C5'-C6'-O6'
47	A	204	LMT	C4'-C5'-C6'-O6'
52	d	202	CDL	CA7-C31-C32-C33

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Mol	Chain	Res	Type	Atoms
52	d	205	CDL	CA5-C11-C12-C13
45	L	707	PC1	C21-C22-C23-C24
46	H	601	3PE	C21-C22-C23-C24
46	d	203	3PE	C21-C22-C23-C24
46	m	201	3PE	C21-C22-C23-C24
52	d	202	CDL	CA5-C11-C12-C13
52	d	205	CDL	CB7-C71-C72-C73
52	r	201	CDL	CA5-C11-C12-C13
46	A	202	3PE	C31-C32-C33-C34
52	h	201	CDL	CB7-C71-C72-C73
45	B	203	PC1	C3D-C3E-C3F-C3G
46	M	601	3PE	C25-C26-C27-C28
52	r	201	CDL	C17-C18-C19-C20
47	i	201	LMT	C4'-C5'-C6'-O6'
52	H	602	CDL	CA7-C31-C32-C33
47	p	201	LMT	O5B-C5B-C6B-O6B
46	N	402	3PE	C21-C22-C23-C24
45	A	201	PC1	C11-O13-P-O11
45	B	203	PC1	C11-O13-P-O11
45	M	604	PC1	C11-O13-P-O11
45	d	204	PC1	C11-O13-P-O11
45	d	204	PC1	C1-O11-P-O13
46	H	601	3PE	C11-O13-P-O11
46	I	201	3PE	C1-O11-P-O13
46	I	204	3PE	C1-O11-P-O13
46	L	701	3PE	C1-O11-P-O13
46	L	706	3PE	C1-O11-P-O13
46	M	602	3PE	C1-O11-P-O13
46	N	402	3PE	C1-O11-P-O13
46	Y	201	3PE	C1-O11-P-O13
46	d	203	3PE	C1-O11-P-O13
52	K	101	CDL	CB2-OB2-PB2-OB5
52	K	101	CDL	CB3-OB5-PB2-OB2
52	L	702	CDL	CA2-OA2-PA1-OA5
52	N	401	CDL	CA2-OA2-PA1-OA5
52	d	202	CDL	CA2-OA2-PA1-OA5
52	d	202	CDL	CB2-OB2-PB2-OB5
52	d	205	CDL	CA2-OA2-PA1-OA5
52	d	205	CDL	CB2-OB2-PB2-OB5
52	h	201	CDL	CA2-OA2-PA1-OA5
52	h	201	CDL	CB2-OB2-PB2-OB5
52	r	201	CDL	CA2-OA2-PA1-OA5

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Mol	Chain	Res	Type	Atoms
52	r	201	CDL	CA3-OA5-PA1-OA2
46	d	201	3PE	C31-C32-C33-C34
52	d	202	CDL	OB7-CB5-OB6-CB4
58	o	201	MYR	C7-C8-C9-C10
45	M	604	PC1	C23-C24-C25-C26
52	K	101	CDL	C51-C52-C53-C54
52	h	201	CDL	C39-C40-C41-C42
45	d	204	PC1	C22-C21-O21-C2
45	B	202	PC1	C36-C37-C38-C39
45	B	203	PC1	C2E-C2F-C2G-C2H
45	L	707	PC1	C34-C35-C36-C37
46	I	204	3PE	C24-C25-C26-C27
46	M	602	3PE	C2A-C2B-C2C-C2D
52	d	202	CDL	C15-C16-C17-C18
45	B	203	PC1	C25-C26-C27-C28
46	I	204	3PE	C23-C24-C25-C26
46	N	402	3PE	C2A-C2B-C2C-C2D
46	d	201	3PE	C28-C29-C2A-C2B
47	p	201	LMT	C6-C7-C8-C9
45	M	604	PC1	C3-C2-O21-C21
45	d	204	PC1	O22-C21-O21-C2
52	L	702	CDL	CB7-C71-C72-C73
45	A	203	PC1	C23-C24-C25-C26
46	M	601	3PE	C38-C39-C3A-C3B
47	L	705	LMT	C11-C10-C9-C8
52	d	202	CDL	C12-C13-C14-C15
52	d	202	CDL	C51-C52-C53-C54
46	d	203	3PE	C22-C23-C24-C25
52	K	101	CDL	C39-C40-C41-C42
52	H	602	CDL	O1-C1-CA2-OA2
52	d	205	CDL	O1-C1-CA2-OA2
52	d	205	CDL	O1-C1-CB2-OB2
52	h	201	CDL	O1-C1-CB2-OB2
46	I	201	3PE	C35-C36-C37-C38
46	M	602	3PE	C36-C37-C38-C39
47	p	201	LMT	C3-C4-C5-C6
52	N	401	CDL	C34-C35-C36-C37
52	r	201	CDL	C16-C17-C18-C19
52	K	101	CDL	CB5-C51-C52-C53
46	M	602	3PE	C2B-C2C-C2D-C2E
52	h	201	CDL	C32-C33-C34-C35
57	T	101	EHZ	C21-C22-C23-C24

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Mol	Chain	Res	Type	Atoms
45	M	603	PC1	C2C-C2D-C2E-C2F
47	L	704	LMT	C5-C6-C7-C8
47	p	201	LMT	C7-C8-C9-C10
45	Z	200	PC1	C25-C26-C27-C28
46	A	202	3PE	C34-C35-C36-C37
46	I	204	3PE	C25-C26-C27-C28
46	L	701	3PE	C23-C24-C25-C26
46	L	701	3PE	C26-C27-C28-C29
46	L	703	3PE	C32-C33-C34-C35
46	Y	201	3PE	C33-C34-C35-C36
52	d	205	CDL	C35-C36-C37-C38
45	Z	200	PC1	C35-C36-C37-C38
46	I	201	3PE	C24-C25-C26-C27
46	M	601	3PE	C2A-C2B-C2C-C2D
47	p	201	LMT	C11-C10-C9-C8
45	B	203	PC1	C22-C21-O21-C2
45	A	203	PC1	C22-C23-C24-C25
45	B	202	PC1	C27-C28-C29-C2A
46	I	201	3PE	C34-C35-C36-C37
46	L	706	3PE	C36-C37-C38-C39
46	b	101	3PE	C2C-C2D-C2E-C2F
52	N	401	CDL	C38-C39-C40-C41
52	h	201	CDL	C35-C36-C37-C38
45	A	203	PC1	C21-C22-C23-C24
52	K	101	CDL	CA5-C11-C12-C13
46	A	202	3PE	C22-C23-C24-C25
46	I	204	3PE	C34-C35-C36-C37
46	N	402	3PE	C2B-C2C-C2D-C2E
52	r	201	CDL	C51-C52-C53-C54
46	M	601	3PE	C39-C3A-C3B-C3C
52	H	602	CDL	C31-C32-C33-C34
52	K	101	CDL	C36-C37-C38-C39
52	L	702	CDL	C53-C54-C55-C56
45	M	603	PC1	C2B-C2C-C2D-C2E
45	M	604	PC1	C3A-C3B-C3C-C3D
46	L	701	3PE	C27-C28-C29-C2A
46	M	601	3PE	C35-C36-C37-C38
52	K	101	CDL	C38-C39-C40-C41
52	N	401	CDL	C17-C18-C19-C20
58	o	201	MYR	C4-C5-C6-C7
45	d	204	PC1	C37-C38-C39-C3A
46	L	701	3PE	C24-C25-C26-C27

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Mol	Chain	Res	Type	Atoms
52	d	202	CDL	C37-C38-C39-C40
52	r	201	CDL	C18-C19-C20-C21
52	L	702	CDL	C71-CB7-OB8-CB6
46	L	703	3PE	C38-C39-C3A-C3B
52	h	201	CDL	C12-C13-C14-C15
52	r	201	CDL	C14-C15-C16-C17
57	T	101	EHZ	S1-C10-C11-N1
47	M	606	LMT	C1-C2-C3-C4
46	L	706	3PE	C3A-C3B-C3C-C3D
46	d	201	3PE	C3A-C3B-C3C-C3D
46	M	602	3PE	C2C-C2D-C2E-C2F
46	Y	201	3PE	C27-C28-C29-C2A
52	d	202	CDL	C38-C39-C40-C41
46	L	706	3PE	C22-C21-O21-C2
46	M	601	3PE	C22-C21-O21-C2
52	h	201	CDL	C52-C53-C54-C55
45	B	203	PC1	C3B-C3C-C3D-C3E
46	L	701	3PE	C36-C37-C38-C39
52	H	602	CDL	C51-C52-C53-C54
52	H	602	CDL	CA5-C11-C12-C13
46	L	701	3PE	C22-C23-C24-C25
52	L	702	CDL	C56-C57-C58-C59
52	K	101	CDL	CA2-C1-CB2-OB2
45	L	707	PC1	C39-C3A-C3B-C3C
46	L	703	3PE	C36-C37-C38-C39
46	M	602	3PE	C29-C2A-C2B-C2C
45	B	203	PC1	O22-C21-O21-C2
46	L	706	3PE	O22-C21-O21-C2
46	M	601	3PE	O22-C21-O21-C2
46	N	402	3PE	C26-C27-C28-C29
47	L	705	LMT	O1'-C1-C2-C3
52	d	202	CDL	C19-C20-C21-C22
52	h	201	CDL	C14-C15-C16-C17
47	L	705	LMT	O5B-C5B-C6B-O6B
45	B	203	PC1	C33-C34-C35-C36
45	M	603	PC1	C25-C26-C27-C28
52	h	201	CDL	CA7-C31-C32-C33
52	L	702	CDL	C11-CA5-OA6-CA4
46	H	601	3PE	C23-C24-C25-C26
46	Y	201	3PE	C25-C26-C27-C28
52	d	205	CDL	C34-C35-C36-C37
52	L	702	CDL	OB9-CB7-OB8-CB6

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Mol	Chain	Res	Type	Atoms
46	L	703	3PE	C33-C34-C35-C36
46	Y	201	3PE	C23-C24-C25-C26
47	L	704	LMT	C3'-C4'-O1B-C1B
47	M	606	LMT	C7-C8-C9-C10
52	d	202	CDL	CB7-C71-C72-C73
52	K	101	CDL	C15-C16-C17-C18
45	B	203	PC1	C28-C29-C2A-C2B
46	d	203	3PE	C35-C36-C37-C38
52	K	101	CDL	C17-C18-C19-C20
45	B	203	PC1	C35-C36-C37-C38
45	M	603	PC1	C23-C24-C25-C26
57	T	101	EHZ	C2-C1-C21-C22
45	d	204	PC1	C32-C33-C34-C35
52	d	202	CDL	C36-C37-C38-C39
52	r	201	CDL	C11-C12-C13-C14
46	b	101	3PE	C31-C32-C33-C34
52	L	702	CDL	C51-CB5-OB6-CB4
52	r	201	CDL	C11-CA5-OA6-CA4
46	I	201	3PE	O11-C1-C2-O21
52	r	201	CDL	OB5-CB3-CB4-OB6
45	B	203	PC1	C2B-C2C-C2D-C2E
52	L	702	CDL	C55-C56-C57-C58
46	N	402	3PE	C22-C23-C24-C25
52	L	702	CDL	OB7-CB5-OB6-CB4
52	r	201	CDL	OA7-CA5-OA6-CA4
45	M	603	PC1	C2E-C2F-C2G-C2H
46	M	602	3PE	O21-C2-C3-O31
52	r	201	CDL	C59-C60-C61-C62
46	I	204	3PE	C27-C28-C29-C2A
47	M	606	LMT	C2-C3-C4-C5
52	d	202	CDL	C23-C24-C25-C26
47	Y	202	LMT	C5-C6-C7-C8
52	d	202	CDL	C20-C21-C22-C23
47	i	201	LMT	O5B-C5B-C6B-O6B
52	L	702	CDL	OA7-CA5-OA6-CA4
46	L	703	3PE	C1-O11-P-O13
52	H	602	CDL	CB2-OB2-PB2-OB5
52	N	401	CDL	CA3-OA5-PA1-OA2
52	N	401	CDL	CB2-OB2-PB2-OB5
45	L	707	PC1	O11-C1-C2-C3
46	M	601	3PE	O11-C1-C2-C3
52	L	702	CDL	OA5-CA3-CA4-CA6

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Mol	Chain	Res	Type	Atoms
52	L	702	CDL	OB5-CB3-CB4-CB6
52	d	205	CDL	OA5-CA3-CA4-CA6
52	h	201	CDL	OA5-CA3-CA4-CA6
46	L	703	3PE	C26-C27-C28-C29
46	d	203	3PE	C3A-C3B-C3C-C3D
46	b	101	3PE	C27-C28-C29-C2A
47	p	201	LMT	C4-C5-C6-C7
52	N	401	CDL	C32-C33-C34-C35
45	Z	200	PC1	C2B-C2C-C2D-C2E
45	M	604	PC1	C32-C33-C34-C35
46	d	201	3PE	C38-C39-C3A-C3B
46	d	203	3PE	C3C-C3D-C3E-C3F
52	h	201	CDL	C51-C52-C53-C54
45	A	201	PC1	C1-C2-C3-O31
45	M	604	PC1	C1-C2-C3-O31
46	H	601	3PE	C1-C2-C3-O31
46	L	706	3PE	C1-C2-C3-O31
46	N	402	3PE	C1-C2-C3-O31
52	H	602	CDL	CA3-CA4-CA6-OA8
52	K	101	CDL	CB3-CB4-CB6-OB8
52	h	201	CDL	CA3-CA4-CA6-OA8
52	r	201	CDL	CA3-CA4-CA6-OA8
46	d	203	3PE	C36-C37-C38-C39
52	L	702	CDL	CB4-CB6-OB8-CB7
45	B	203	PC1	C3A-C3B-C3C-C3D
52	H	602	CDL	C33-C34-C35-C36
46	M	601	3PE	C3A-C3B-C3C-C3D
46	Y	201	3PE	C2A-C2B-C2C-C2D
52	H	602	CDL	C71-C72-C73-C74
46	L	703	3PE	C37-C38-C39-C3A
46	L	706	3PE	C23-C24-C25-C26
46	I	204	3PE	C29-C2A-C2B-C2C
46	L	701	3PE	C32-C33-C34-C35
46	d	201	3PE	C26-C27-C28-C29
47	L	704	LMT	C5'-C4'-O1B-C1B
52	d	205	CDL	C43-C44-C45-C46
46	L	706	3PE	C39-C3A-C3B-C3C
52	h	201	CDL	C76-C77-C78-C79
46	b	101	3PE	C38-C39-C3A-C3B
47	L	704	LMT	O1'-C1-C2-C3
52	K	101	CDL	C35-C36-C37-C38
52	h	201	CDL	C31-C32-C33-C34

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Mol	Chain	Res	Type	Atoms
46	L	701	3PE	C25-C26-C27-C28
46	N	402	3PE	C2F-C2G-C2H-C2I
52	h	201	CDL	C34-C35-C36-C37
46	L	701	3PE	C31-C32-C33-C34
46	d	201	3PE	C3B-C3C-C3D-C3E
46	d	203	3PE	C3D-C3E-C3F-C3G
46	N	402	3PE	C3-C2-O21-C21
52	H	602	CDL	CA3-CA4-OA6-CA5
46	m	201	3PE	C25-C26-C27-C28
47	p	201	LMT	C5-C6-C7-C8
46	N	402	3PE	C3B-C3C-C3D-C3E
46	d	203	3PE	C23-C24-C25-C26
52	K	101	CDL	C71-CB7-OB8-CB6
45	M	604	PC1	O11-C1-C2-O21
46	M	601	3PE	O11-C1-C2-O21
46	Y	201	3PE	O11-C1-C2-O21
46	d	203	3PE	O11-C1-C2-O21
52	N	401	CDL	OA5-CA3-CA4-OA6
46	M	602	3PE	C21-C22-C23-C24
47	i	201	LMT	O1'-C1-C2-C3
45	L	707	PC1	C31-C32-C33-C34
45	M	604	PC1	C21-C22-C23-C24
46	I	201	3PE	C31-C32-C33-C34
45	B	203	PC1	C23-C24-C25-C26
46	m	201	3PE	C26-C27-C28-C29
45	L	707	PC1	O21-C21-C22-C23
52	d	202	CDL	OB6-CB4-CB6-OB8
46	N	402	3PE	C37-C38-C39-C3A
52	r	201	CDL	C12-C13-C14-C15
52	r	201	CDL	C55-C56-C57-C58
45	M	603	PC1	C2F-C2G-C2H-C2I
46	L	703	3PE	C3C-C3D-C3E-C3F
46	N	402	3PE	C3C-C3D-C3E-C3F
46	N	402	3PE	C2C-C2D-C2E-C2F
46	m	201	3PE	C27-C28-C29-C2A
52	L	702	CDL	C52-C53-C54-C55
46	L	706	3PE	C3B-C3C-C3D-C3E
52	d	202	CDL	C52-C53-C54-C55
52	H	602	CDL	CA2-C1-CB2-OB2
46	L	703	3PE	C22-C21-O21-C2
46	M	602	3PE	C33-C34-C35-C36
46	Y	201	3PE	C2D-C2E-C2F-C2G

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Mol	Chain	Res	Type	Atoms
46	b	101	3PE	C34-C35-C36-C37
57	T	101	EHZ	C22-C23-C24-C25
45	A	201	PC1	O11-C1-C2-C3
46	I	201	3PE	O11-C1-C2-C3
46	m	201	3PE	O11-C1-C2-C3
52	H	602	CDL	OB5-CB3-CB4-CB6
52	d	205	CDL	OB5-CB3-CB4-CB6
52	r	201	CDL	OB5-CB3-CB4-CB6
46	M	601	3PE	C21-C22-C23-C24
46	M	602	3PE	C26-C27-C28-C29
45	A	203	PC1	C25-C26-C27-C28
46	L	706	3PE	C37-C38-C39-C3A
47	L	704	LMT	C11-C10-C9-C8
46	I	201	3PE	C32-C31-O31-C3
46	m	201	3PE	C31-C32-C33-C34
47	i	201	LMT	C2-C1-O1'-C1'
46	A	202	3PE	C23-C24-C25-C26
46	M	601	3PE	C36-C37-C38-C39
46	I	201	3PE	C33-C34-C35-C36
47	i	201	LMT	C9-C10-C11-C12
52	L	702	CDL	C57-C58-C59-C60
58	o	201	MYR	C6-C7-C8-C9
46	I	204	3PE	C1-C2-C3-O31
46	Y	201	3PE	C1-C2-C3-O31
52	N	401	CDL	CA3-CA4-CA6-OA8
52	d	205	CDL	CA3-CA4-CA6-OA8
46	L	706	3PE	C34-C35-C36-C37
46	b	101	3PE	C23-C24-C25-C26
46	d	201	3PE	C32-C33-C34-C35
52	K	101	CDL	C54-C55-C56-C57
46	L	701	3PE	C39-C3A-C3B-C3C
46	d	201	3PE	C21-C22-C23-C24
45	Z	200	PC1	C24-C25-C26-C27
46	M	602	3PE	C32-C33-C34-C35
46	M	602	3PE	C25-C26-C27-C28
45	Z	200	PC1	C1-O11-P-O13
46	d	201	3PE	C1-O11-P-O13
52	H	602	CDL	CA2-OA2-PA1-OA5
52	H	602	CDL	CB3-OB5-PB2-OB2
46	L	706	3PE	C21-C22-C23-C24
52	L	702	CDL	C12-C13-C14-C15
52	d	205	CDL	C38-C39-C40-C41

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Mol	Chain	Res	Type	Atoms
45	Z	200	PC1	O11-C1-C2-O21
52	d	205	CDL	OA5-CA3-CA4-OA6
52	d	205	CDL	OB5-CB3-CB4-OB6
52	K	101	CDL	OB9-CB7-OB8-CB6
46	A	202	3PE	C38-C39-C3A-C3B
46	M	601	3PE	C2E-C2F-C2G-C2H
45	M	604	PC1	O21-C2-C3-O31
46	L	706	3PE	O21-C2-C3-O31
46	N	402	3PE	O21-C2-C3-O31
46	Y	201	3PE	O21-C2-C3-O31
46	d	203	3PE	O21-C2-C3-O31
52	h	201	CDL	OA6-CA4-CA6-OA8
52	r	201	CDL	C60-C61-C62-C63
52	N	401	CDL	CA2-C1-CB2-OB2
52	h	201	CDL	CA2-C1-CB2-OB2
46	Y	201	3PE	C21-C22-C23-C24
46	M	601	3PE	C26-C27-C28-C29
46	M	602	3PE	C27-C28-C29-C2A
46	H	601	3PE	C24-C25-C26-C27
46	M	601	3PE	C37-C38-C39-C3A
52	h	201	CDL	C73-C74-C75-C76
57	T	101	EHZ	C3-C4-C5-C6
50	F	501	FMN	C4'-C5'-O5'-P
52	K	101	CDL	CB4-CB3-OB5-PB2
47	L	704	LMT	C6-C7-C8-C9
46	Y	201	3PE	C31-C32-C33-C34
45	L	707	PC1	C3A-C3B-C3C-C3D
45	Z	200	PC1	C2F-C2G-C2H-C2I
46	A	202	3PE	C25-C26-C27-C28
46	b	101	3PE	C2E-C2F-C2G-C2H
46	d	201	3PE	C36-C37-C38-C39
46	N	402	3PE	C27-C28-C29-C2A
46	L	703	3PE	O22-C21-O21-C2
52	d	205	CDL	C75-C76-C77-C78
46	L	706	3PE	O11-C1-C2-C3
46	M	602	3PE	C38-C39-C3A-C3B
45	B	203	PC1	C2F-C2G-C2H-C2I
46	d	201	3PE	C22-C23-C24-C25
46	b	101	3PE	C29-C2A-C2B-C2C
45	B	203	PC1	C2A-C2B-C2C-C2D
45	B	203	PC1	C3F-C3G-C3H-C3I
52	r	201	CDL	C56-C57-C58-C59

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Mol	Chain	Res	Type	Atoms
52	h	201	CDL	C11-C12-C13-C14
45	Z	200	PC1	C2D-C2E-C2F-C2G
52	r	201	CDL	C58-C59-C60-C61
52	h	201	CDL	C75-C76-C77-C78
52	N	401	CDL	CB3-CB4-OB6-CB5
46	I	201	3PE	C32-C33-C34-C35
46	b	101	3PE	C33-C34-C35-C36
47	M	606	LMT	C11-C10-C9-C8
57	U	101	EHZ	C21-C1-C2-C3
46	d	201	3PE	C3C-C3D-C3E-C3F
52	K	101	CDL	C72-C73-C74-C75
52	d	202	CDL	C17-C18-C19-C20
45	Z	200	PC1	C21-C22-C23-C24
45	M	603	PC1	C2-C1-O11-P
45	M	604	PC1	C2-C1-O11-P
46	b	101	3PE	C1-C2-C3-O31
46	d	201	3PE	C1-C2-C3-O31
46	d	203	3PE	C1-C2-C3-O31
46	L	706	3PE	O11-C1-C2-O21
46	m	201	3PE	O11-C1-C2-O21
52	L	702	CDL	OB5-CB3-CB4-OB6
46	I	201	3PE	C37-C38-C39-C3A
52	L	702	CDL	C14-C15-C16-C17
52	L	702	CDL	C51-C52-C53-C54
57	T	101	EHZ	C15-C16-C17-C19
57	U	101	EHZ	O1-C7-C8-C9
46	I	201	3PE	O32-C31-O31-C3
46	d	201	3PE	O21-C2-C3-O31
52	d	205	CDL	OA6-CA4-CA6-OA8
55	P	401	NDP	C2B-O2B-P2B-O3X
52	K	101	CDL	C16-C17-C18-C19
52	h	201	CDL	C16-C17-C18-C19
46	H	601	3PE	C22-C21-O21-C2
46	I	201	3PE	C36-C37-C38-C39
46	b	101	3PE	C39-C3A-C3B-C3C
47	i	201	LMT	C5-C6-C7-C8
52	d	205	CDL	C11-C12-C13-C14
52	h	201	CDL	C15-C16-C17-C18
46	b	101	3PE	C22-C21-O21-C2
46	d	203	3PE	C11-O13-P-O11
46	m	201	3PE	C1-O11-P-O13
52	d	205	CDL	CB3-OB5-PB2-OB2

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Mol	Chain	Res	Type	Atoms
47	p	201	LMT	C9-C10-C11-C12
45	Z	200	PC1	C39-C3A-C3B-C3C
52	L	702	CDL	CA4-CA3-OA5-PA1
52	d	202	CDL	C1-CB2-OB2-PB2
45	A	201	PC1	C11-O13-P-O12
45	A	203	PC1	C11-O13-P-O12
45	A	203	PC1	C1-O11-P-O14
45	B	203	PC1	C1-O11-P-O14
45	M	604	PC1	C1-O11-P-O14
45	d	204	PC1	C11-O13-P-O12
45	d	204	PC1	C11-O13-P-O14
46	I	201	3PE	C1-O11-P-O12
46	I	204	3PE	C1-O11-P-O14
46	L	703	3PE	C1-O11-P-O12
46	M	602	3PE	C1-O11-P-O12
46	d	201	3PE	C1-O11-P-O12
46	m	201	3PE	C1-O11-P-O12
46	m	201	3PE	C1-O11-P-O14
52	H	602	CDL	CB2-OB2-PB2-OB4
52	K	101	CDL	CB2-OB2-PB2-OB3
52	K	101	CDL	CB3-OB5-PB2-OB3
52	N	401	CDL	CA3-OA5-PA1-OA4
52	N	401	CDL	CB2-OB2-PB2-OB3
52	r	201	CDL	CB2-OB2-PB2-OB4
57	U	101	EHZ	C6-C7-C8-C9
52	K	101	CDL	CA7-C31-C32-C33
45	M	604	PC1	O11-C1-C2-C3
46	L	701	3PE	O11-C1-C2-C3
46	Y	201	3PE	O11-C1-C2-C3
46	d	203	3PE	O11-C1-C2-C3
52	N	401	CDL	OA5-CA3-CA4-CA6
47	L	705	LMT	C9-C10-C11-C12
45	B	203	PC1	C38-C39-C3A-C3B
45	Z	200	PC1	C37-C38-C39-C3A
46	I	204	3PE	C35-C36-C37-C38
46	A	202	3PE	C12-C11-O13-P
46	I	204	3PE	C12-C11-O13-P
46	M	601	3PE	C12-C11-O13-P
46	Y	201	3PE	C12-C11-O13-P
57	T	101	EHZ	C1-C2-C3-C4
46	b	101	3PE	O22-C21-O21-C2
45	L	707	PC1	O11-C1-C2-O21

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Mol	Chain	Res	Type	Atoms
46	L	701	3PE	O11-C1-C2-O21
45	M	604	PC1	C38-C39-C3A-C3B
46	N	402	3PE	C32-C33-C34-C35
45	M	604	PC1	C11-C12-N-C14
45	L	707	PC1	C24-C25-C26-C27
46	M	601	3PE	C2D-C2E-C2F-C2G
47	L	705	LMT	C3-C4-C5-C6
45	B	203	PC1	C29-C2A-C2B-C2C
45	Z	200	PC1	O13-C11-C12-N
46	M	601	3PE	C1-C2-C3-O31
46	M	602	3PE	C1-C2-C3-O31
52	r	201	CDL	CB3-CB4-CB6-OB8
45	A	201	PC1	O21-C2-C3-O31
46	M	601	3PE	O21-C2-C3-O31
46	b	101	3PE	O21-C2-C3-O31
52	h	201	CDL	C53-C54-C55-C56
52	r	201	CDL	CA4-CA3-OA5-PA1
46	M	602	3PE	C39-C3A-C3B-C3C
46	Y	201	3PE	C29-C2A-C2B-C2C
47	M	606	LMT	C4-C5-C6-C7
45	A	203	PC1	C32-C33-C34-C35
46	M	602	3PE	C34-C35-C36-C37
46	M	602	3PE	C3D-C3E-C3F-C3G
52	h	201	CDL	CA5-C11-C12-C13
46	L	701	3PE	C3A-C3B-C3C-C3D
47	L	705	LMT	C6-C7-C8-C9
45	M	603	PC1	C24-C25-C26-C27
52	h	201	CDL	C33-C34-C35-C36
52	d	205	CDL	CB2-C1-CA2-OA2
45	Z	200	PC1	C36-C37-C38-C39
46	H	601	3PE	O22-C21-O21-C2
47	A	204	LMT	C5-C6-C7-C8
46	N	402	3PE	C23-C24-C25-C26
45	B	202	PC1	C34-C35-C36-C37
47	Y	202	LMT	C2-C3-C4-C5
45	d	204	PC1	C33-C34-C35-C36
45	M	604	PC1	C11-C12-N-C13
52	d	202	CDL	OA7-CA5-OA6-CA4
45	B	202	PC1	C22-C23-C24-C25
52	d	202	CDL	C11-CA5-OA6-CA4
46	L	701	3PE	C35-C36-C37-C38
52	K	101	CDL	OB6-CB4-CB6-OB8

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Mol	Chain	Res	Type	Atoms
46	b	101	3PE	C22-C23-C24-C25
46	d	203	3PE	C39-C3A-C3B-C3C
45	B	202	PC1	C11-O13-P-O11
45	B	203	PC1	C1-O11-P-O13
45	M	603	PC1	C26-C27-C28-C29
47	M	606	LMT	O1'-C1-C2-C3
57	T	101	EHZ	O5-C16-C17-C18
57	T	101	EHZ	O5-C16-C17-C19
52	H	602	CDL	CA4-CA6-OA8-CA7
46	L	703	3PE	C1-C2-C3-O31
52	d	202	CDL	CB3-CB4-CB6-OB8
46	b	101	3PE	O21-C21-C22-C23
52	d	205	CDL	C52-C51-CB5-OB6
46	b	101	3PE	C26-C27-C28-C29
58	o	201	MYR	C3-C4-C5-C6
54	O	402	DGT	PB-O3A-PA-O1A
52	K	101	CDL	C41-C42-C43-C44
45	A	201	PC1	C34-C35-C36-C37
45	A	203	PC1	C2-C1-O11-P
52	H	602	CDL	CB2-C1-CA2-OA2
46	I	204	3PE	C21-C22-C23-C24
52	K	101	CDL	OB5-CB3-CB4-CB6
55	P	401	NDP	O4D-C1D-N1N-C6N
45	A	203	PC1	O11-C1-C2-O21
46	N	402	3PE	O11-C1-C2-O21
47	M	606	LMT	C9-C10-C11-C12
46	M	601	3PE	C34-C35-C36-C37
46	d	201	3PE	C2B-C2C-C2D-C2E
52	d	205	CDL	OB6-CB4-CB6-OB8
52	K	101	CDL	C71-C72-C73-C74
52	N	401	CDL	CB4-CB3-OB5-PB2
46	d	201	3PE	C29-C2A-C2B-C2C
52	H	602	CDL	C12-C11-CA5-OA6
47	A	204	LMT	C2-C3-C4-C5
46	b	101	3PE	C2B-C2C-C2D-C2E
52	K	101	CDL	C13-C14-C15-C16
45	B	203	PC1	C1-C2-C3-O31
52	h	201	CDL	C71-C72-C73-C74
46	m	201	3PE	C23-C24-C25-C26
45	M	604	PC1	C11-C12-N-C15
52	d	205	CDL	C41-C42-C43-C44
45	A	203	PC1	C11-O13-P-O11

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Mol	Chain	Res	Type	Atoms
45	A	203	PC1	C1-O11-P-O13
55	P	401	NDP	C2D-C1D-N1N-C6N
46	m	201	3PE	C22-C23-C24-C25
45	A	203	PC1	C24-C25-C26-C27
46	M	602	3PE	C28-C29-C2A-C2B
57	U	101	EHZ	C4-C5-C6-C7
46	d	201	3PE	C27-C28-C29-C2A
45	A	203	PC1	O11-C1-C2-C3
52	d	202	CDL	C71-C72-C73-C74
46	N	402	3PE	C38-C39-C3A-C3B
50	F	501	FMN	O3'-C3'-C4'-C5'
45	Z	200	PC1	C31-C32-C33-C34
46	L	701	3PE	C21-C22-C23-C24
45	M	604	PC1	C35-C36-C37-C38
52	d	205	CDL	CA2-C1-CB2-OB2
46	M	602	3PE	C3B-C3C-C3D-C3E
46	Y	201	3PE	C34-C35-C36-C37
45	A	201	PC1	C23-C24-C25-C26
46	d	203	3PE	O31-C31-C32-C33
45	d	204	PC1	C11-C12-N-C13
45	L	707	PC1	O22-C21-C22-C23
46	L	703	3PE	C31-C32-C33-C34
45	M	604	PC1	C39-C3A-C3B-C3C
47	i	201	LMT	C2-C3-C4-C5
52	d	202	CDL	C21-C22-C23-C24
52	r	201	CDL	OA5-CA3-CA4-OA6
47	L	705	LMT	C1-C2-C3-C4
46	A	202	3PE	C32-C33-C34-C35
46	m	201	3PE	C2F-C2G-C2H-C2I
45	Z	200	PC1	O11-C1-C2-C3
52	d	202	CDL	C32-C33-C34-C35
45	Z	200	PC1	O21-C21-C22-C23
52	K	101	CDL	C1-CB2-OB2-PB2
45	L	707	PC1	O21-C2-C3-O31
52	H	602	CDL	OA6-CA4-CA6-OA8
52	d	202	CDL	C12-C11-CA5-OA6
45	B	203	PC1	O31-C31-C32-C33
46	N	402	3PE	C3A-C3B-C3C-C3D
52	d	205	CDL	C52-C51-CB5-OB7
52	r	201	CDL	C32-C31-CA7-OA8
47	i	201	LMT	C4-C5-C6-C7
52	h	201	CDL	C17-C18-C19-C20

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Mol	Chain	Res	Type	Atoms
52	L	702	CDL	CA5-C11-C12-C13
46	H	601	3PE	C22-C23-C24-C25
46	M	602	3PE	C3F-C3G-C3H-C3I
46	L	703	3PE	O21-C21-C22-C23
46	M	602	3PE	O31-C31-C32-C33
47	i	201	LMT	C2B-C1B-O1B-C4'
45	M	604	PC1	C22-C23-C24-C25
46	A	202	3PE	C26-C27-C28-C29
46	N	402	3PE	C24-C25-C26-C27
47	M	605	LMT	C3-C4-C5-C6
46	H	601	3PE	C26-C27-C28-C29
46	M	601	3PE	O21-C21-C22-C23
46	d	201	3PE	O21-C21-C22-C23
45	d	204	PC1	C11-C12-N-C14
52	K	101	CDL	C53-C54-C55-C56
52	r	201	CDL	C52-C51-CB5-OB6
45	d	204	PC1	O21-C21-C22-C23
46	L	706	3PE	C32-C33-C34-C35
45	B	202	PC1	O21-C21-C22-C23
45	M	604	PC1	O31-C31-C32-C33
52	K	101	CDL	OA6-CA4-CA6-OA8
52	d	202	CDL	C42-C43-C44-C45
52	L	702	CDL	C52-C51-CB5-OB6
55	P	401	NDP	C5B-O5B-PA-O3
52	r	201	CDL	CA7-C31-C32-C33
45	A	203	PC1	O31-C31-C32-C33
45	B	202	PC1	C2-C1-O11-P
46	M	602	3PE	C2-C1-O11-P
46	d	201	3PE	C2C-C2D-C2E-C2F
45	A	201	PC1	C32-C31-O31-C3
54	O	402	DGT	PA-O3A-PB-O1B
54	O	402	DGT	PB-O3A-PA-O2A
47	L	705	LMT	C4B-C5B-C6B-O6B
46	L	703	3PE	O22-C21-C22-C23
45	B	203	PC1	C24-C25-C26-C27
46	M	601	3PE	C2B-C2C-C2D-C2E
46	A	202	3PE	C28-C29-C2A-C2B
45	B	202	PC1	C29-C2A-C2B-C2C
46	L	703	3PE	C22-C23-C24-C25
52	r	201	CDL	C32-C31-CA7-OA9
46	L	701	3PE	C34-C35-C36-C37
46	M	602	3PE	O32-C31-C32-C33

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Mol	Chain	Res	Type	Atoms
45	L	707	PC1	C23-C24-C25-C26
46	M	601	3PE	O22-C21-C22-C23
46	d	201	3PE	O22-C21-C22-C23
46	d	203	3PE	C33-C34-C35-C36
57	U	101	EHZ	C21-C22-C23-C24
45	B	202	PC1	C32-C31-O31-C3
52	d	202	CDL	C12-C11-CA5-OA7
47	L	704	LMT	C2-C3-C4-C5
52	N	401	CDL	C12-C13-C14-C15
45	B	202	PC1	O22-C21-C22-C23
45	B	203	PC1	O32-C31-C32-C33
45	d	204	PC1	O22-C21-C22-C23
52	K	101	CDL	C52-C53-C54-C55
45	Z	200	PC1	O22-C21-C22-C23
47	p	201	LMT	C2'-C1'-O1'-C1
46	M	602	3PE	C3A-C3B-C3C-C3D
45	A	201	PC1	C11-O13-P-O14
45	L	707	PC1	C1-O11-P-O14
45	L	707	PC1	C11-C12-N-C15
46	H	601	3PE	C1-O11-P-O14
46	I	204	3PE	C11-O13-P-O14
46	L	703	3PE	C1-O11-P-O14
46	Y	201	3PE	C11-O13-P-O14
46	b	101	3PE	C1-O11-P-O12
46	d	203	3PE	C11-O13-P-O14
52	H	602	CDL	CB3-OB5-PB2-OB4
52	N	401	CDL	CA3-OA5-PA1-OA3
52	h	201	CDL	CB3-OB5-PB2-OB3
45	M	603	PC1	C2A-C2B-C2C-C2D
45	A	203	PC1	O32-C31-C32-C33
46	L	706	3PE	O21-C21-C22-C23
45	Z	200	PC1	C29-C2A-C2B-C2C
45	M	604	PC1	O32-C31-C32-C33
52	r	201	CDL	C52-C51-CB5-OB7
54	O	402	DGT	PB-O3B-PG-O3G
46	N	402	3PE	C12-C11-O13-P
46	d	203	3PE	C12-C11-O13-P
46	Y	201	3PE	C2B-C2C-C2D-C2E
52	K	101	CDL	C37-C38-C39-C40
52	K	101	CDL	C12-C11-CA5-OA6
52	d	202	CDL	C33-C34-C35-C36
45	B	202	PC1	O32-C31-O31-C3

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Mol	Chain	Res	Type	Atoms
45	L	707	PC1	C25-C26-C27-C28
45	A	203	PC1	O21-C21-C22-C23
52	L	702	CDL	C52-C51-CB5-OB7
52	h	201	CDL	CB4-CB3-OB5-PB2
57	U	101	EHZ	O3-C12-C13-C14
50	F	501	FMN	N10-C1'-C2'-O2'
46	M	601	3PE	C28-C29-C2A-C2B
46	m	201	3PE	O31-C31-C32-C33
52	K	101	CDL	C40-C41-C42-C43
47	p	201	LMT	O5'-C1'-O1'-C1
45	B	203	PC1	C22-C23-C24-C25
46	L	703	3PE	C39-C3A-C3B-C3C
46	I	204	3PE	C31-C32-C33-C34
46	L	701	3PE	C38-C39-C3A-C3B
52	K	101	CDL	C12-C13-C14-C15

There are no ring outliers.

41 monomers are involved in 132 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
46	M	601	3PE	6	0
52	N	401	CDL	8	0
46	L	703	3PE	3	0
46	Y	201	3PE	1	0
45	B	203	PC1	5	0
45	M	603	PC1	2	0
52	d	205	CDL	5	0
52	H	602	CDL	4	0
47	Y	202	LMT	5	0
46	L	706	3PE	2	0
52	r	201	CDL	2	0
46	m	201	3PE	3	0
45	A	201	PC1	3	0
46	d	203	3PE	1	0
47	A	204	LMT	4	0
47	M	606	LMT	4	0
46	b	101	3PE	3	0
52	K	101	CDL	5	0
47	L	705	LMT	1	0
48	F	502	SF4	1	0
46	M	602	3PE	6	0
47	M	605	LMT	1	0

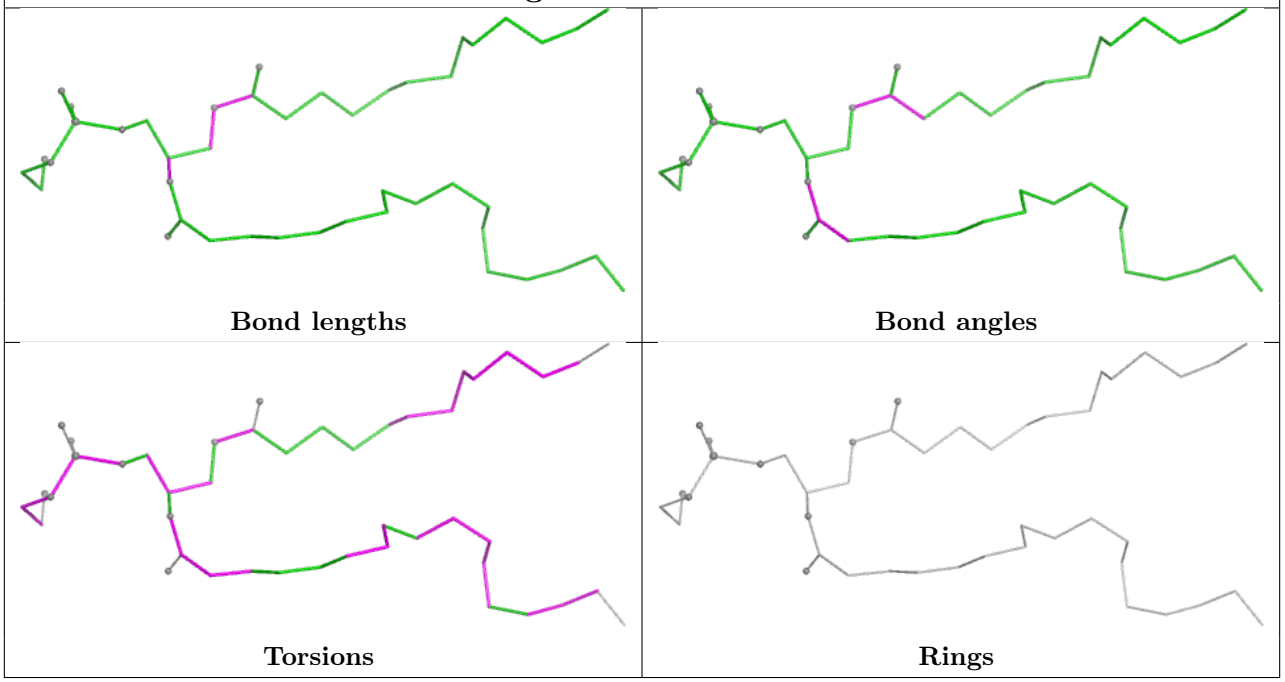
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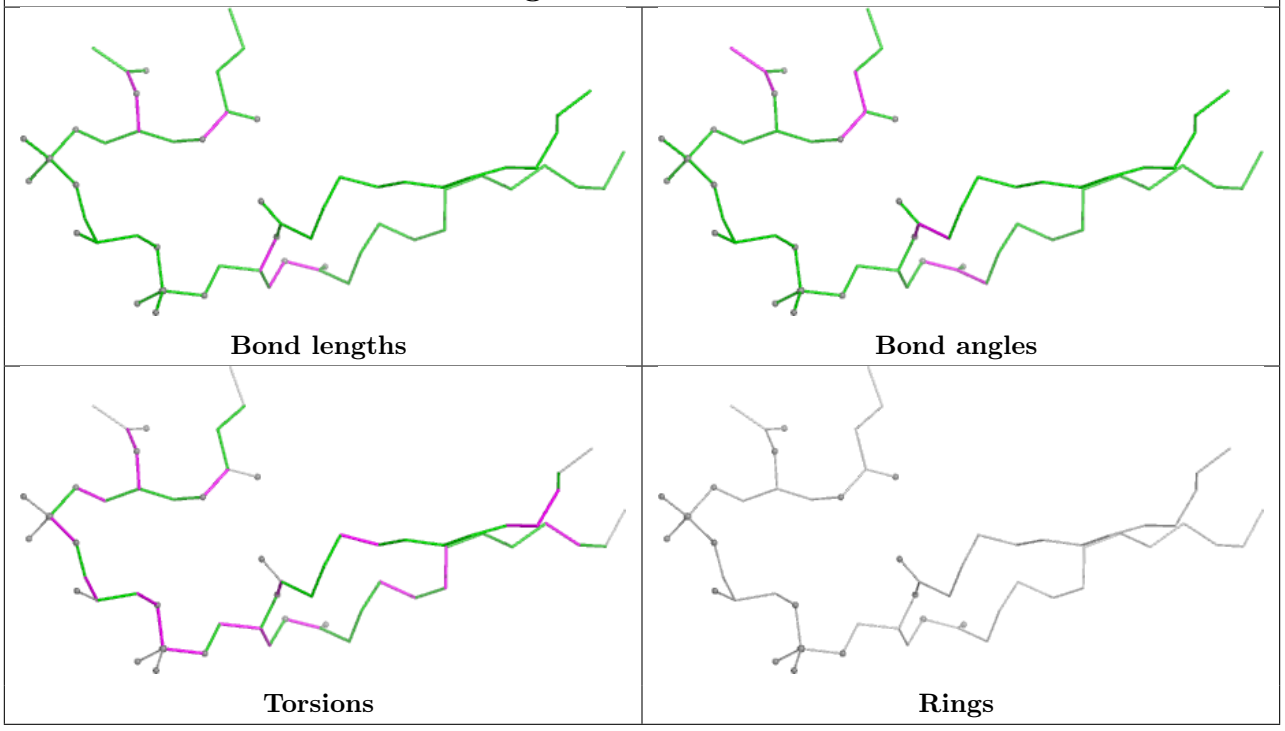
Mol	Chain	Res	Type	Clashes	Symm-Clashes
46	d	201	3PE	8	0
46	N	402	3PE	2	0
54	O	402	DGT	3	0
52	d	202	CDL	4	0
45	B	202	PC1	2	0
47	i	201	LMT	4	0
52	h	201	CDL	8	0
48	B	201	SF4	1	0
46	H	601	3PE	1	0
47	L	704	LMT	3	0
50	F	501	FMN	2	0
45	Z	200	PC1	10	0
45	d	204	PC1	4	0
55	P	401	NDP	4	0
58	o	201	MYR	1	0
45	A	203	PC1	1	0
45	M	604	PC1	4	0
46	I	201	3PE	1	0
46	A	202	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.

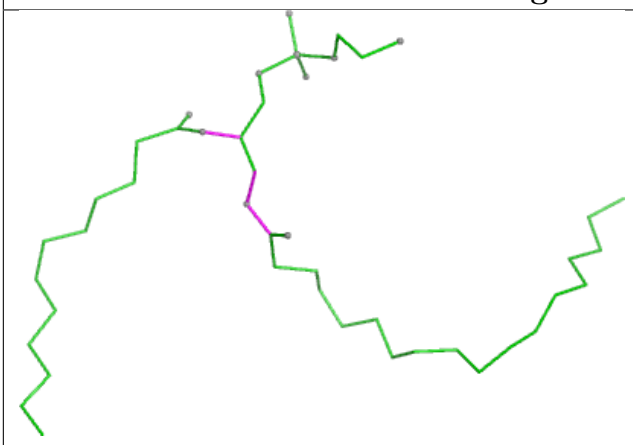
Ligand 3PE M 601



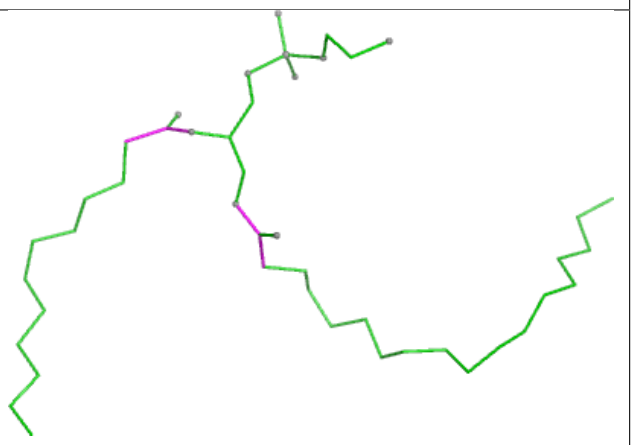
Ligand CDL N 401



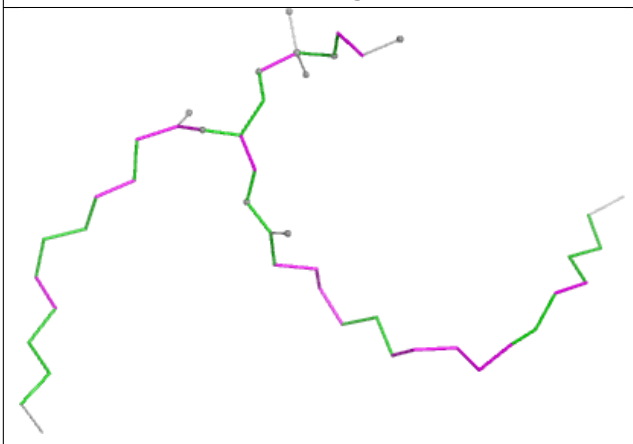
Ligand 3PE L 703



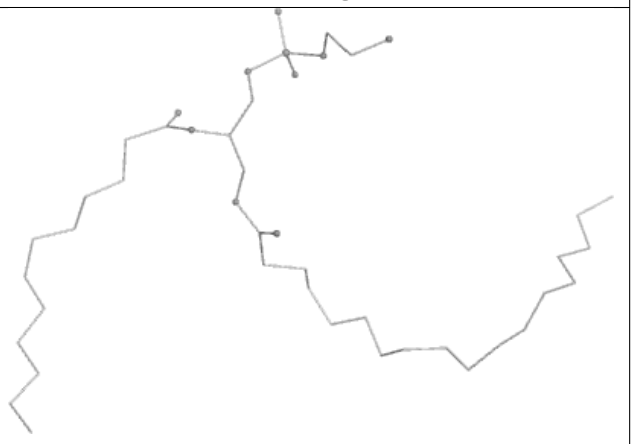
Bond lengths



Bond angles

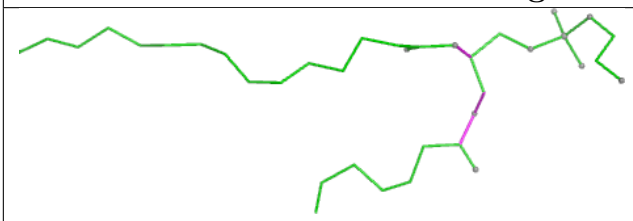


Torsions

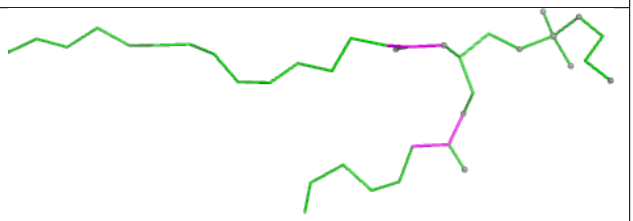


Rings

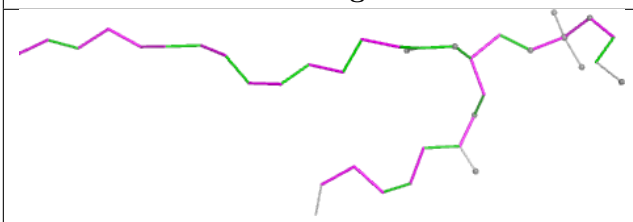
Ligand 3PE Y 201



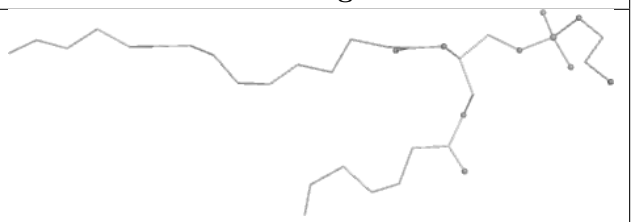
Bond lengths



Bond angles

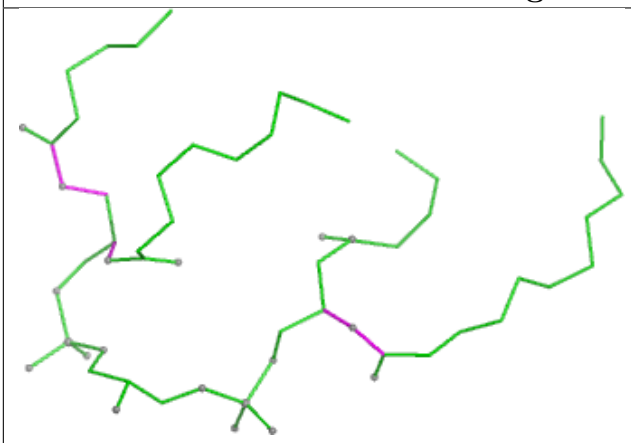


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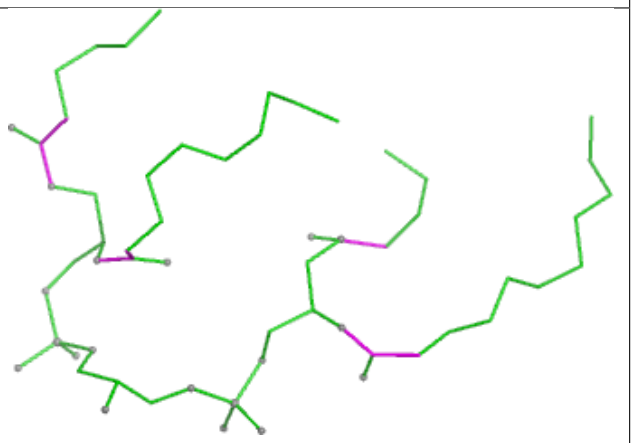


Rings

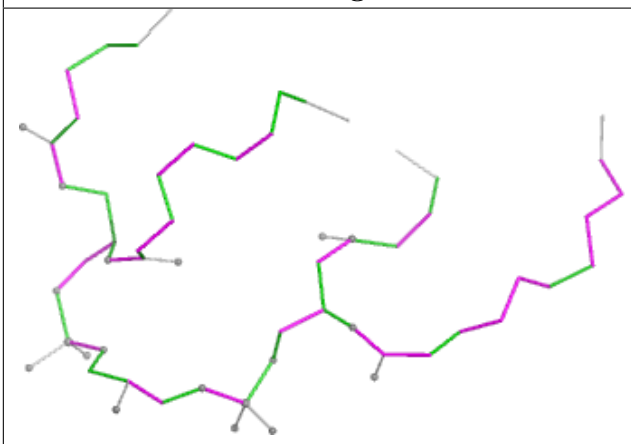
Ligand CDL L 702



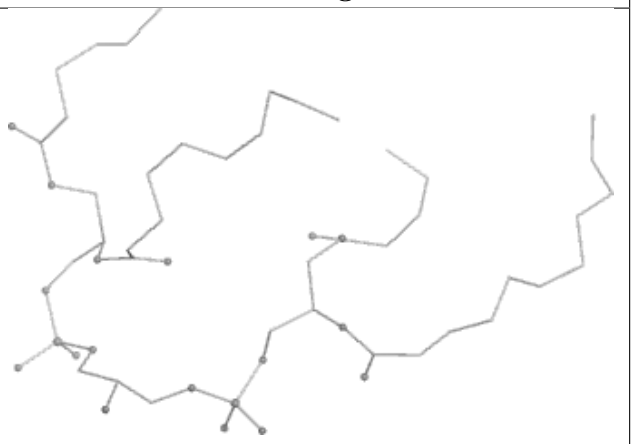
Bond lengths



Bond angles

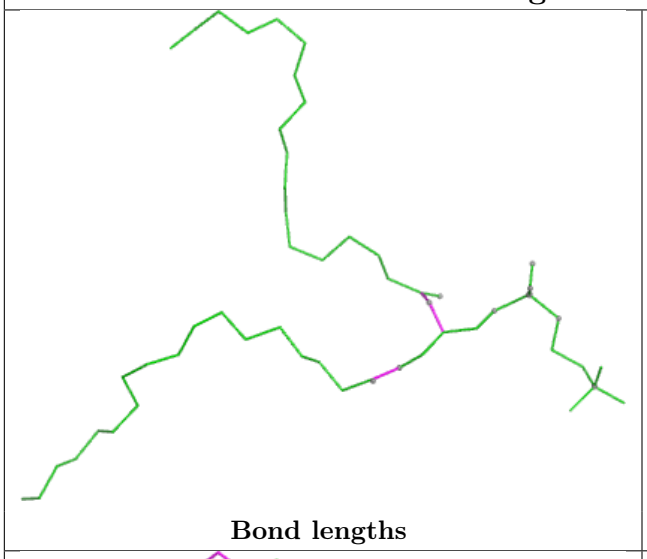


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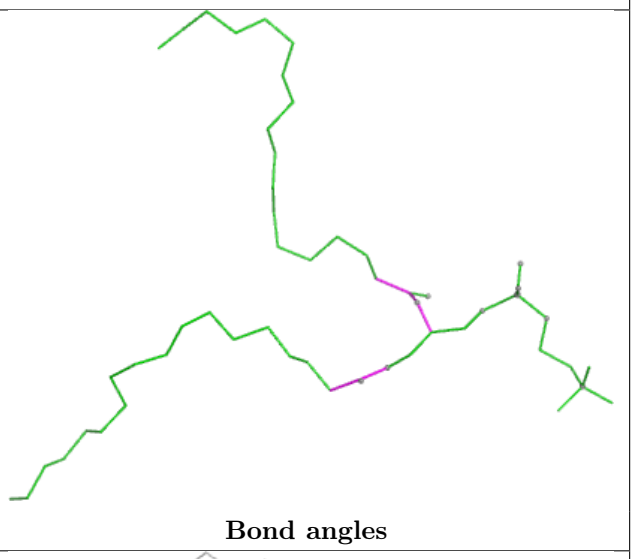


Rings

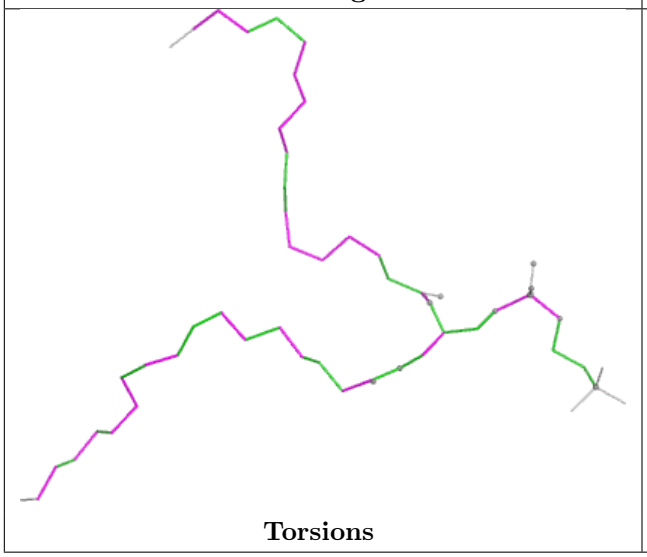
Ligand PC1 B 203



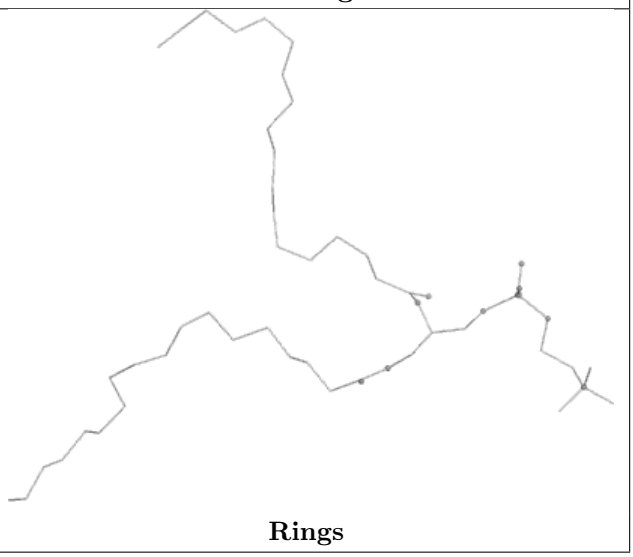
Bond lengths



Bond angles

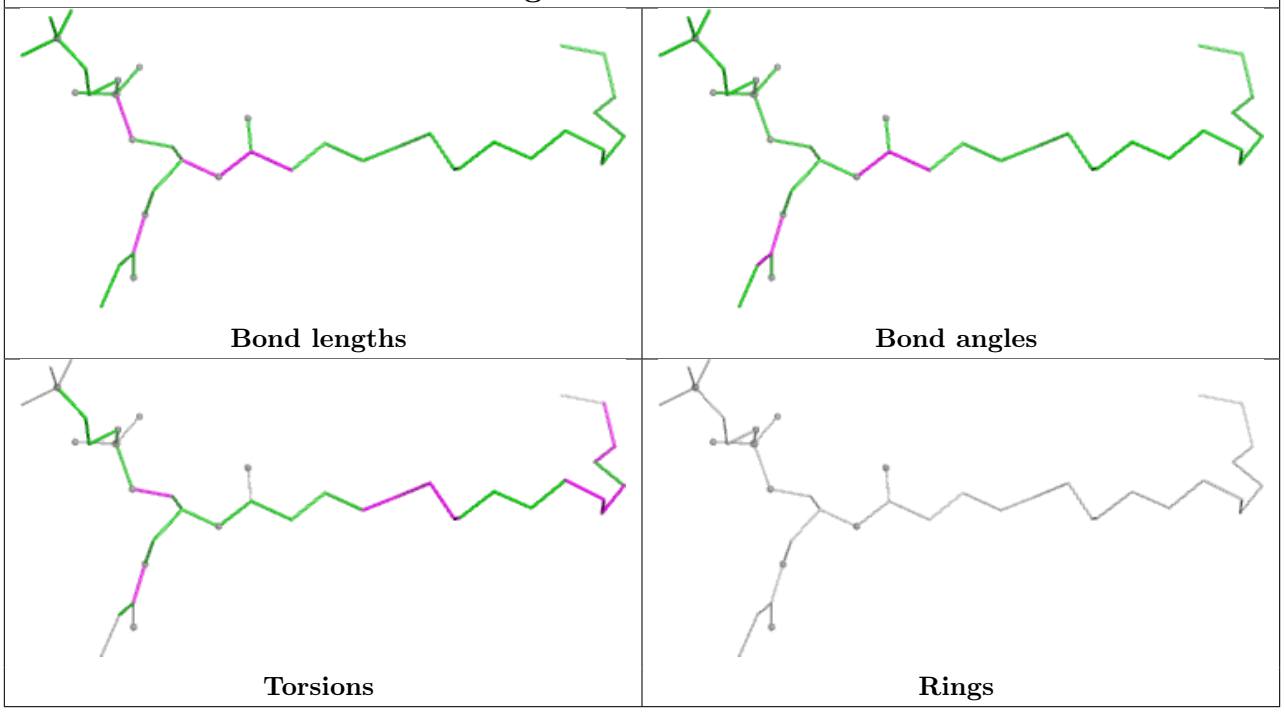


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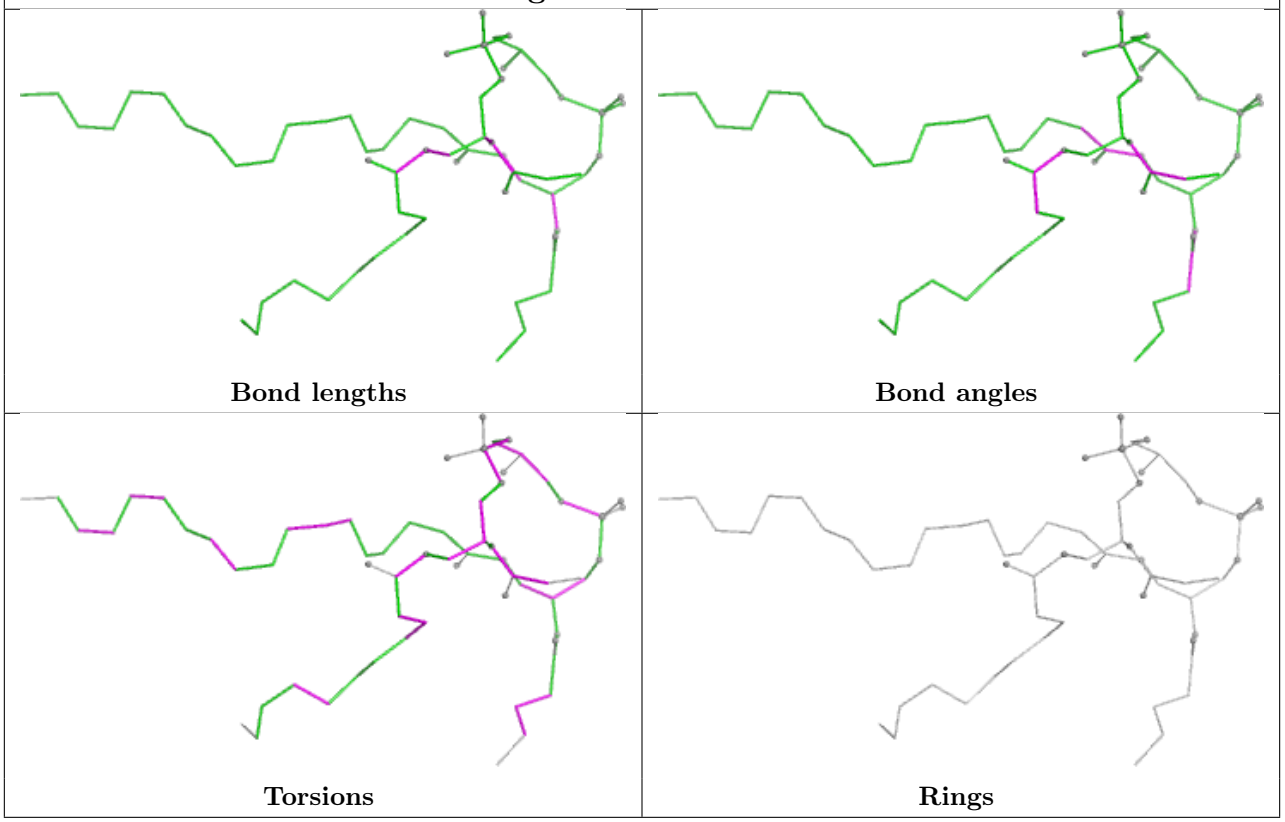


Rings

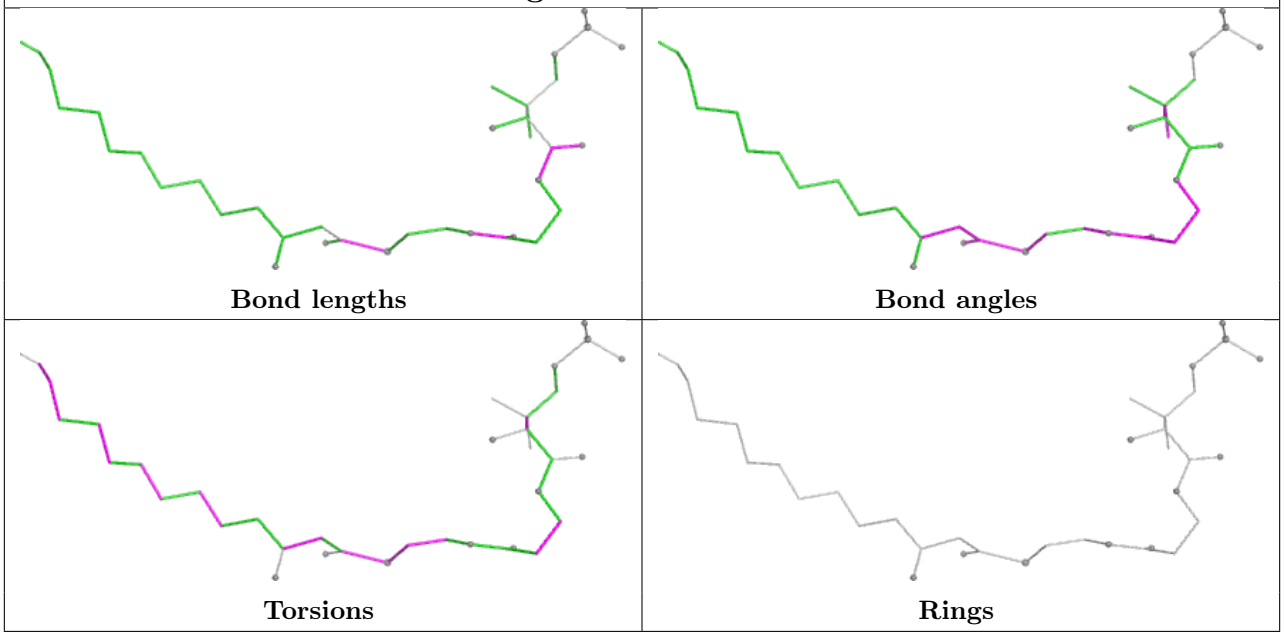
Ligand PC1 M 603



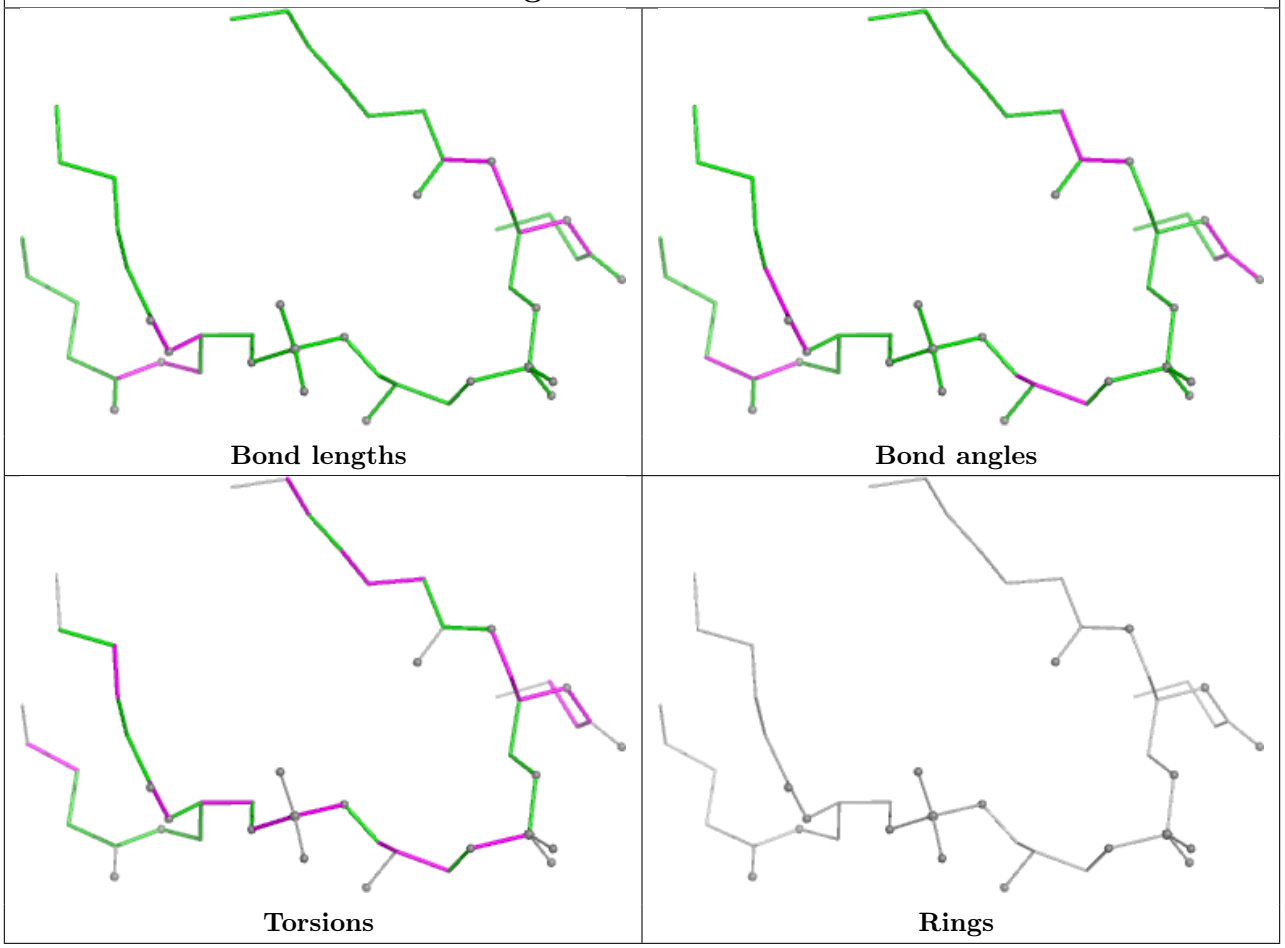
Ligand CDL d 205



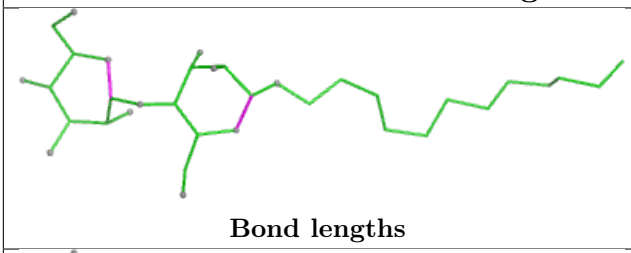
Ligand EHZ T 101



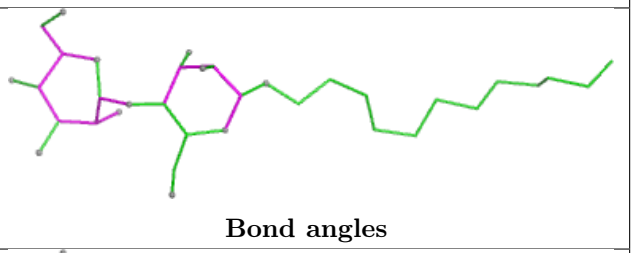
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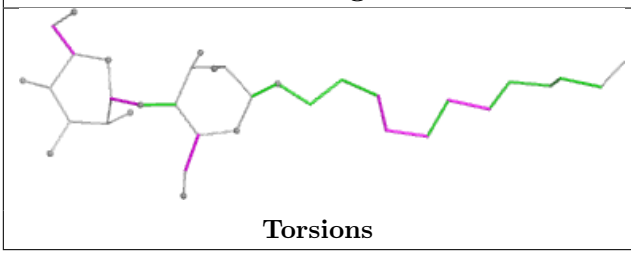
Ligand LMT Y 202



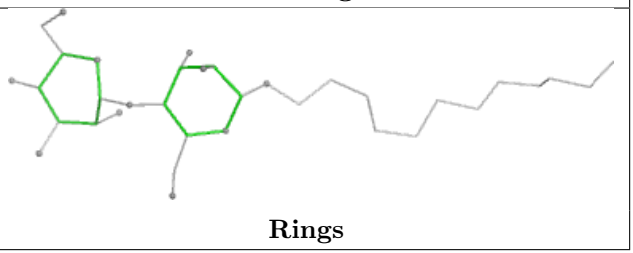
Bond lengths



Bond angles

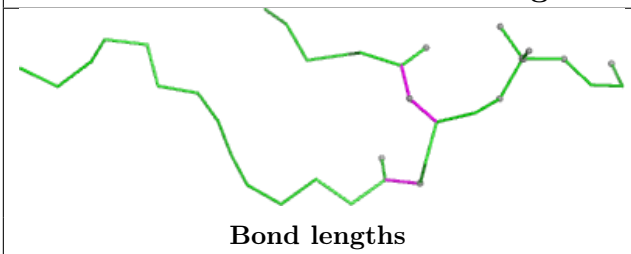


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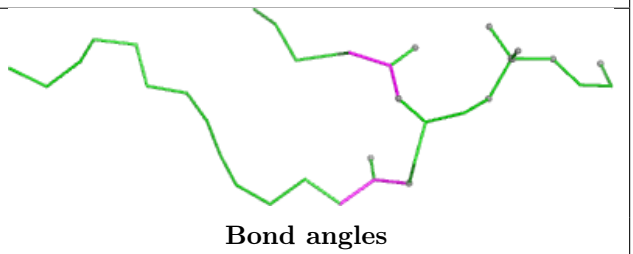


Rings

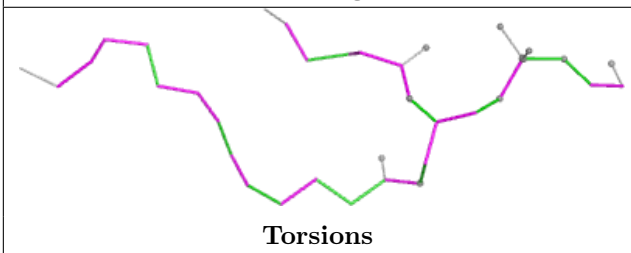
Ligand 3PE L 706



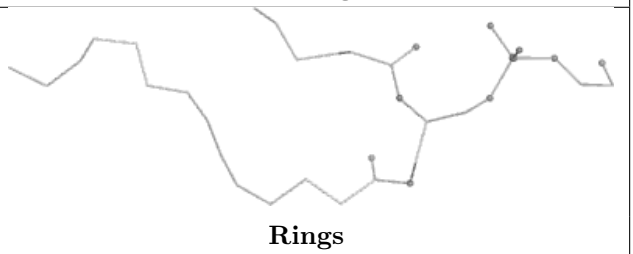
Bond lengths



Bond angles

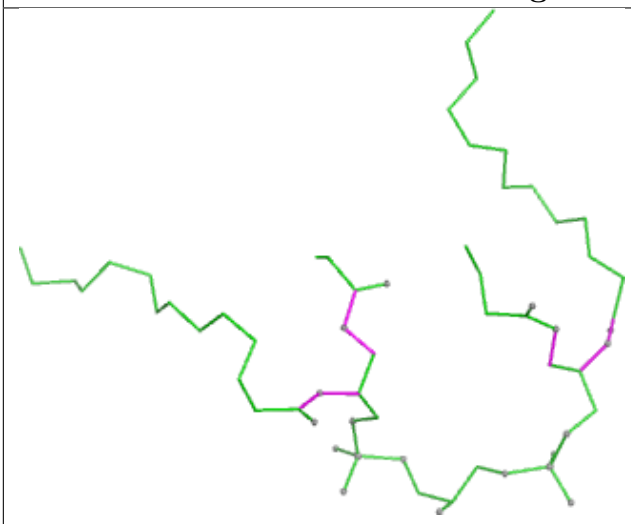


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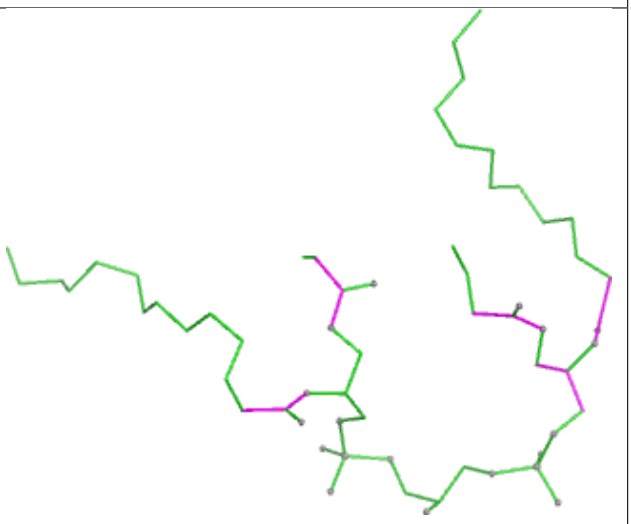


Rings

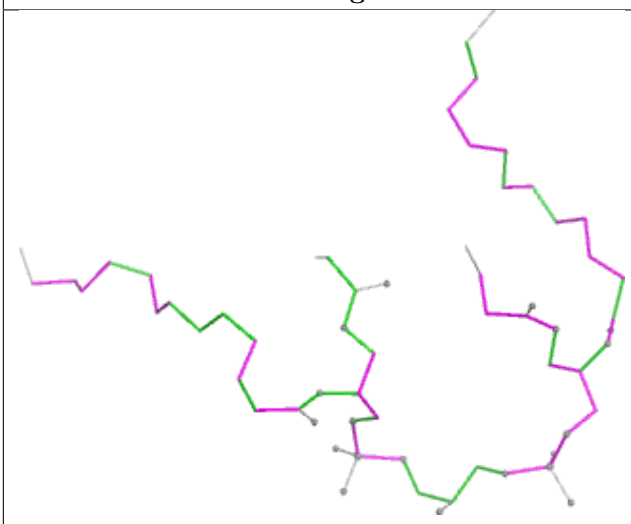
Ligand CDL r 201



Bond lengths



Bond angles

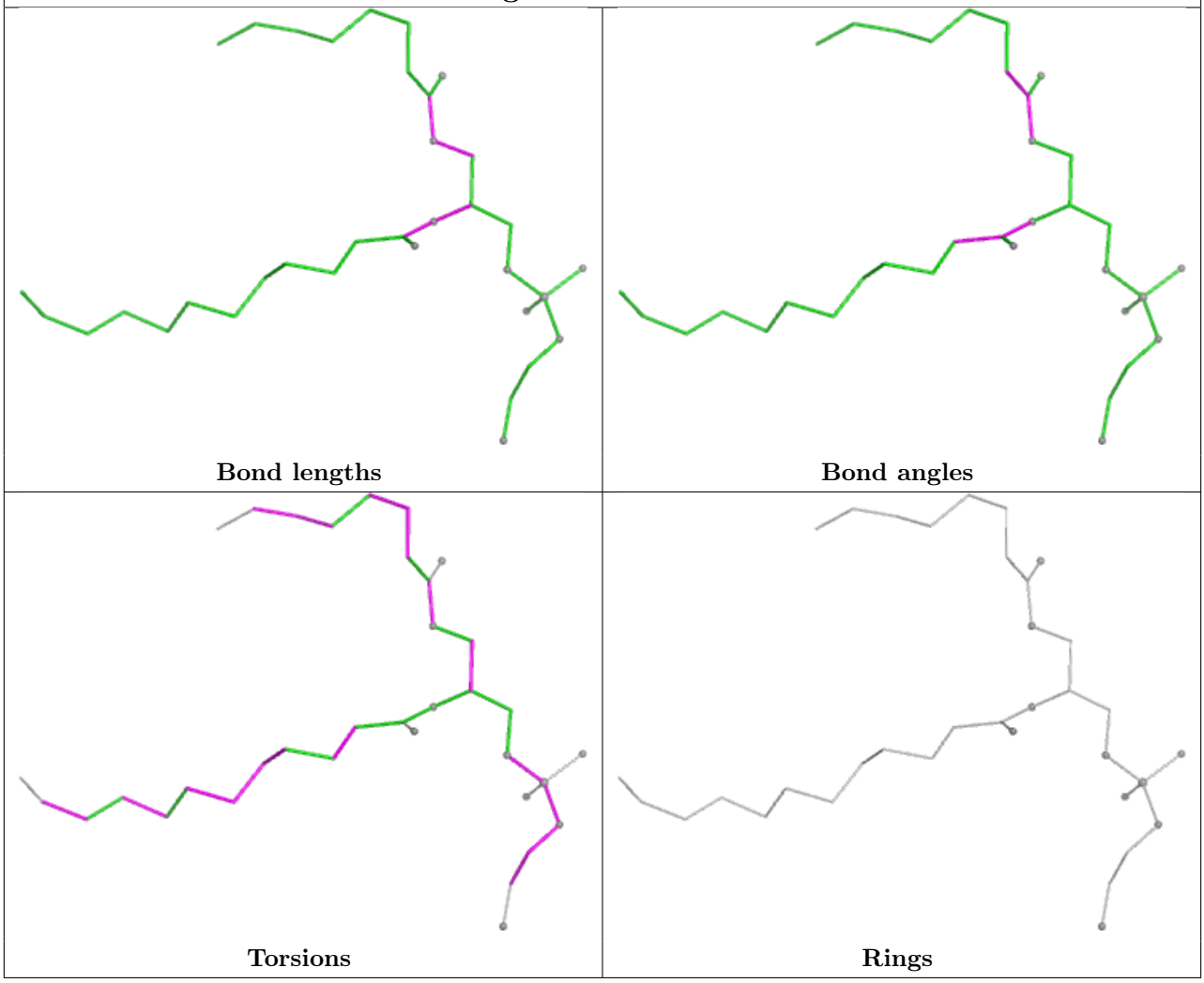


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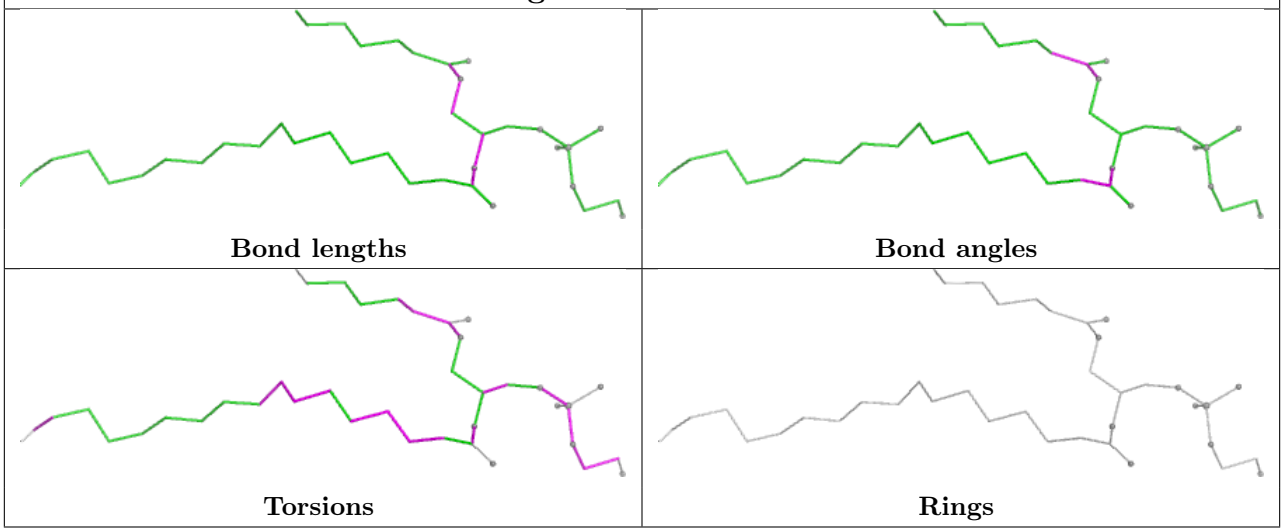


Rings

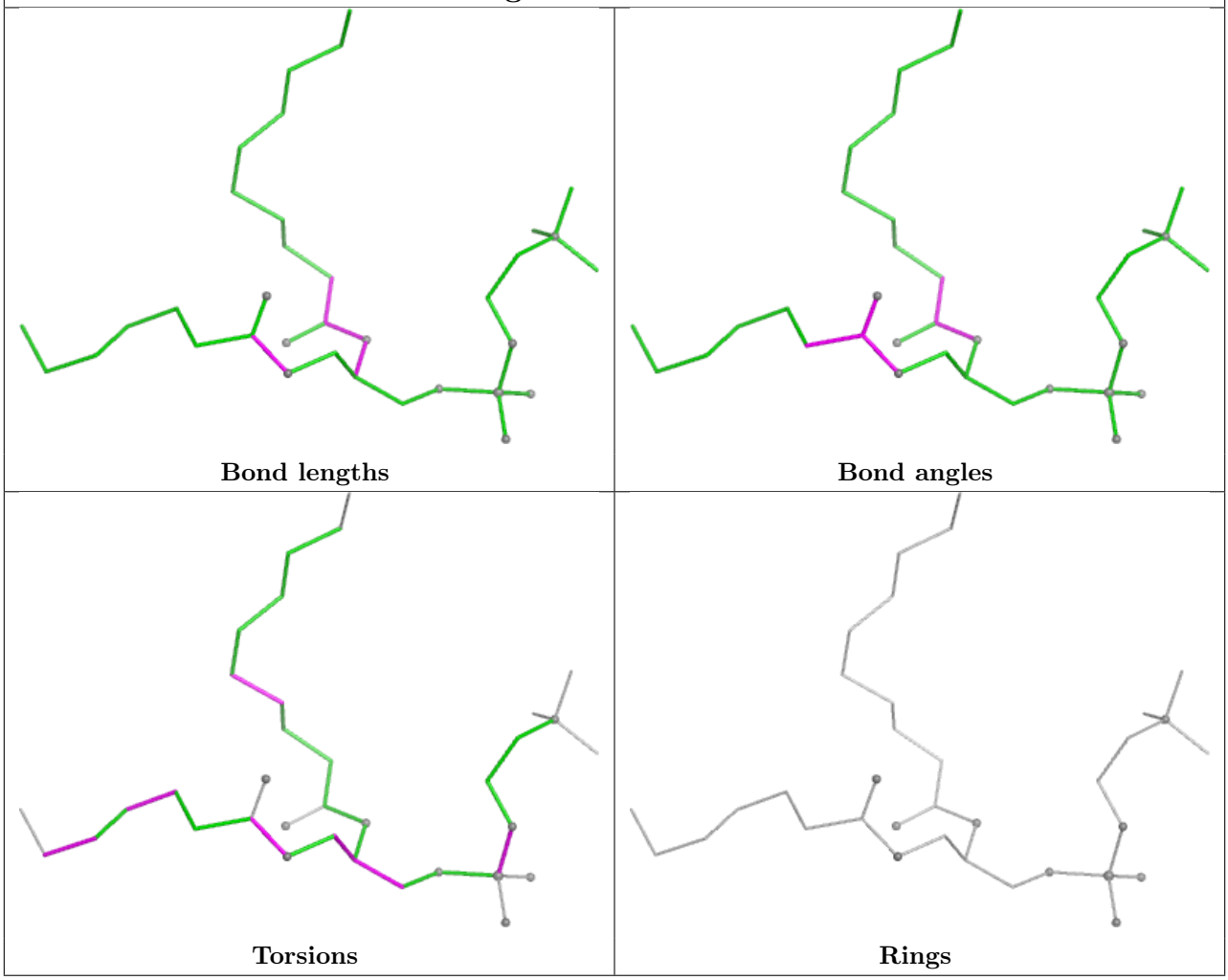
Ligand 3PE I 204



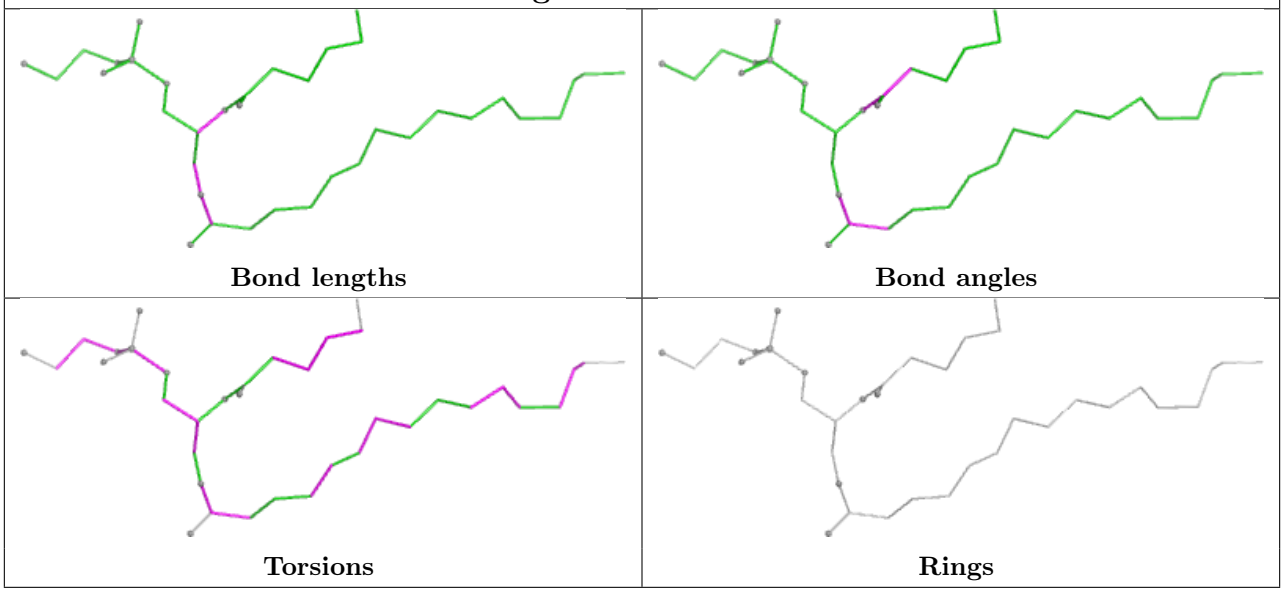
Ligand 3PE m 201



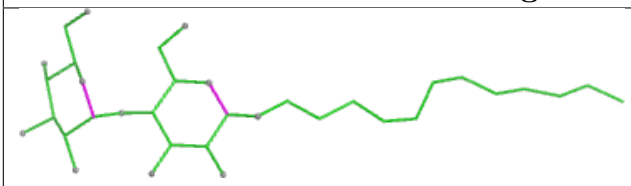
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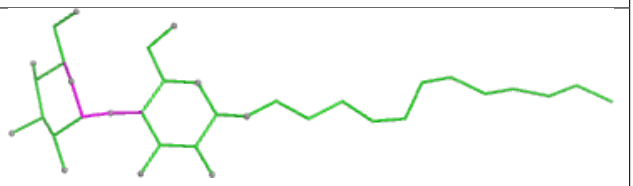


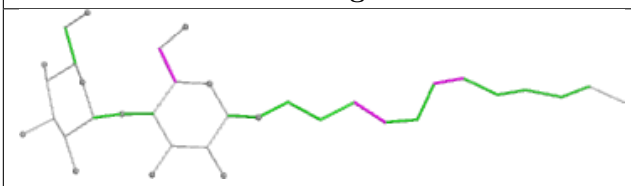
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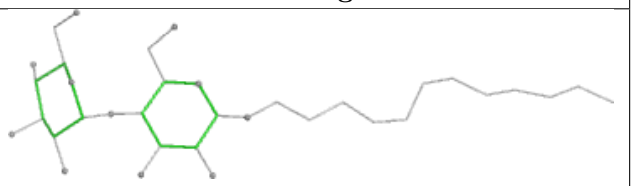


Ligand LMT A 204

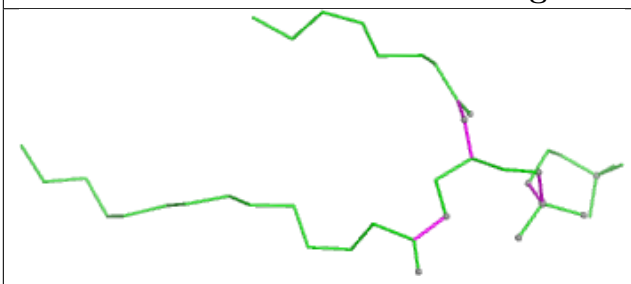

Bond lengths

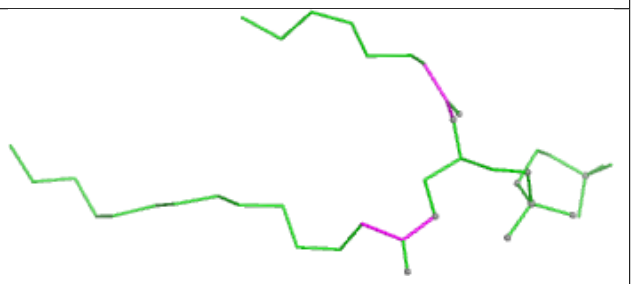

Bond angles

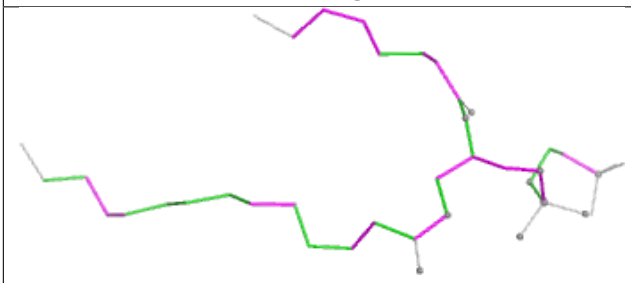

Torsions


Rings

Ligand PC1 L 707


Bond lengths


Bond angles

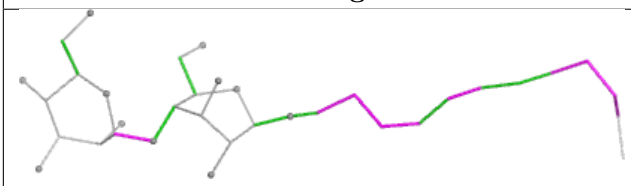

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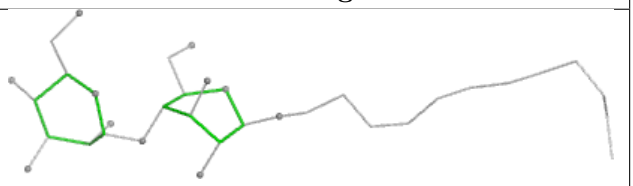

Rings

Ligand LMT M 606

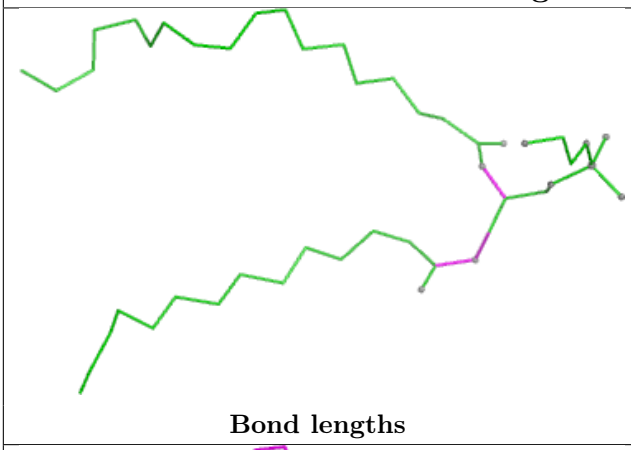

Bond lengths


Bond angles

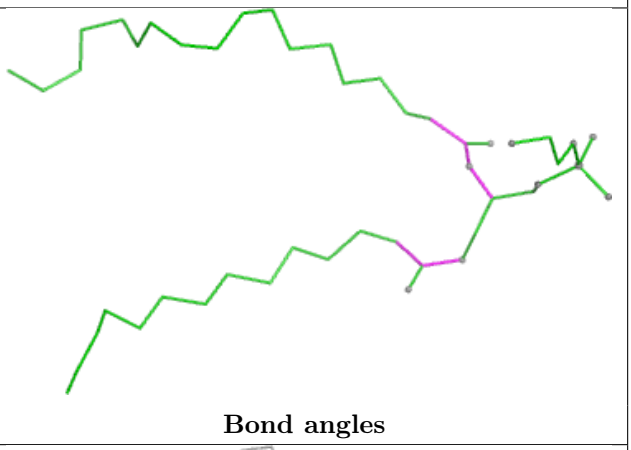

Torsions


Rings

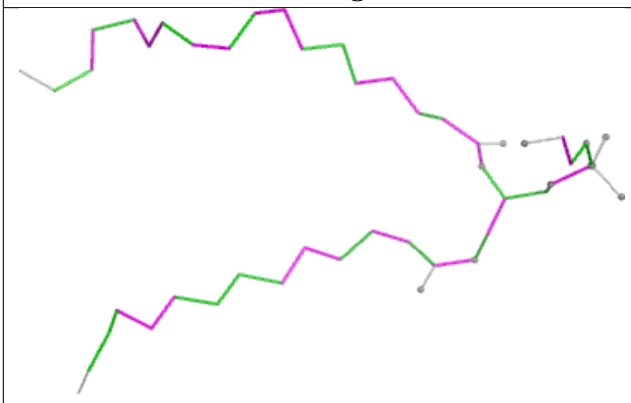
Ligand 3PE b 101



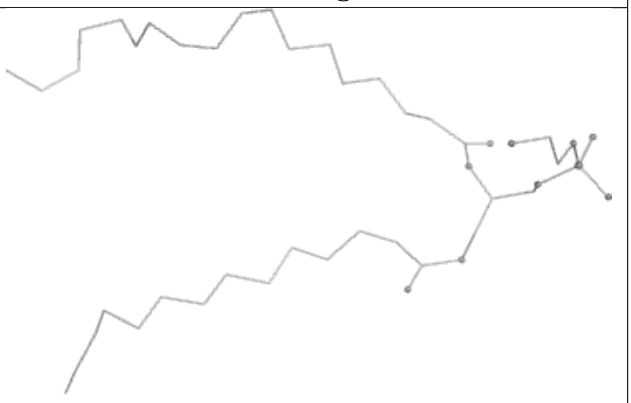
Bond lengths



Bond angles

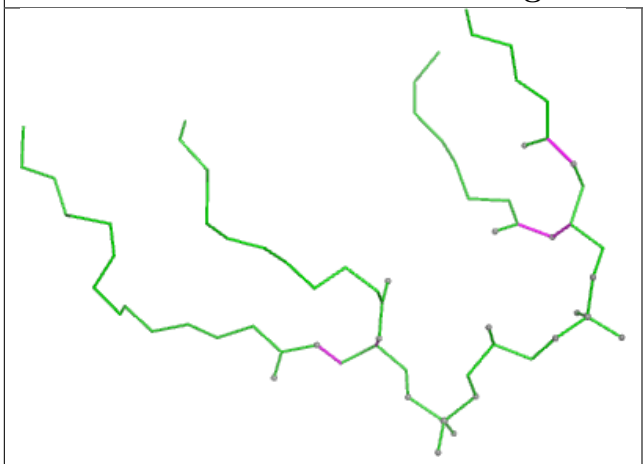


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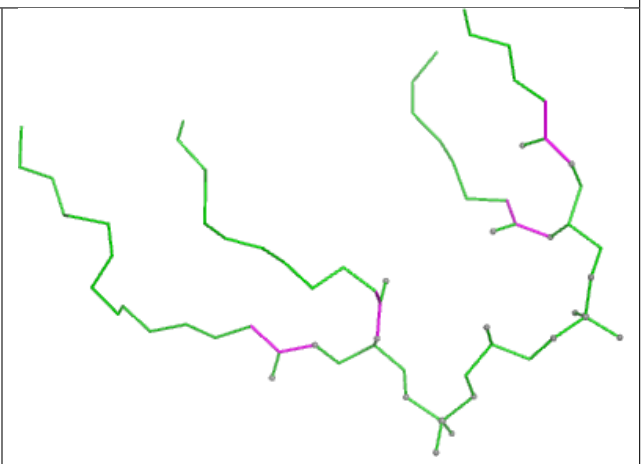


Rings

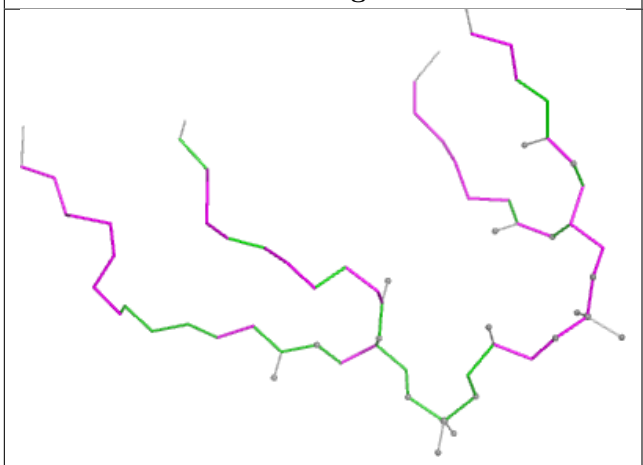
Ligand CDL K 101



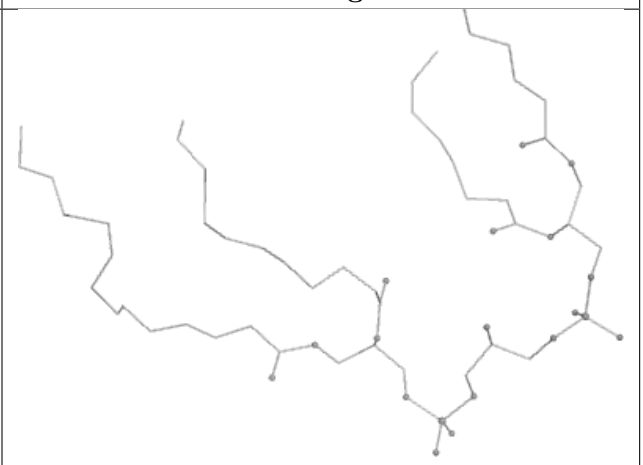
Bond lengths



Bond angles

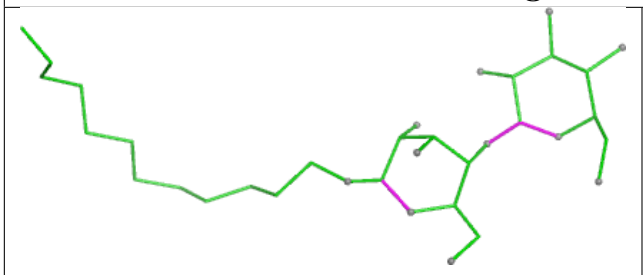


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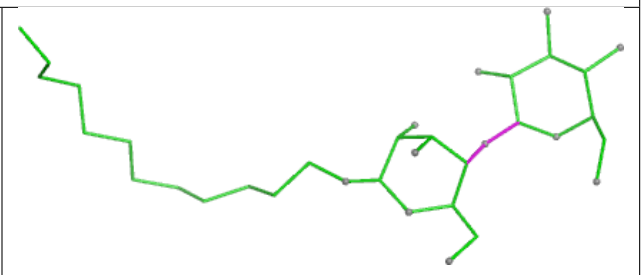


Rings

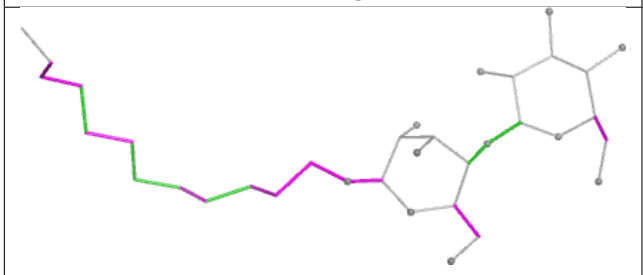
Ligand LMT L 705



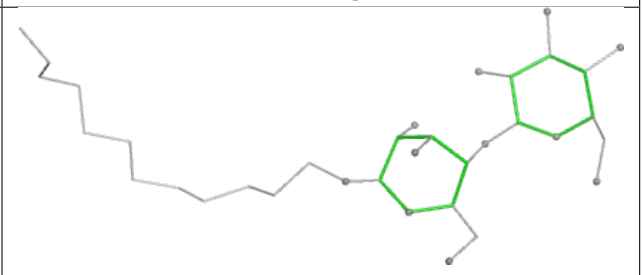
Bond lengths



Bond angles

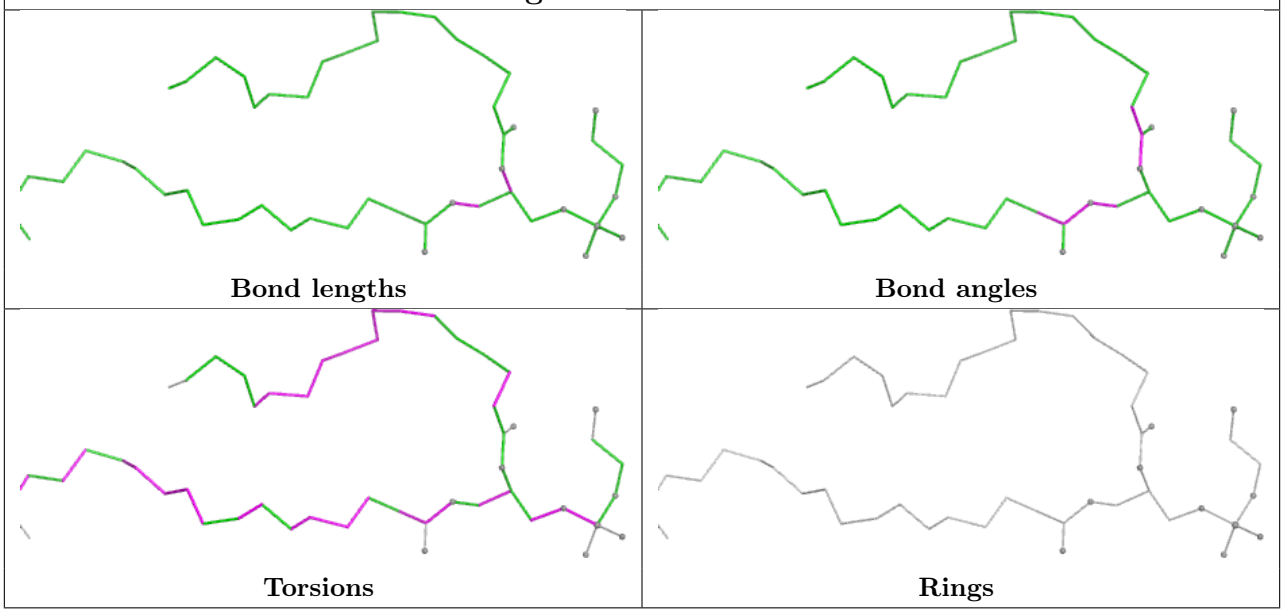


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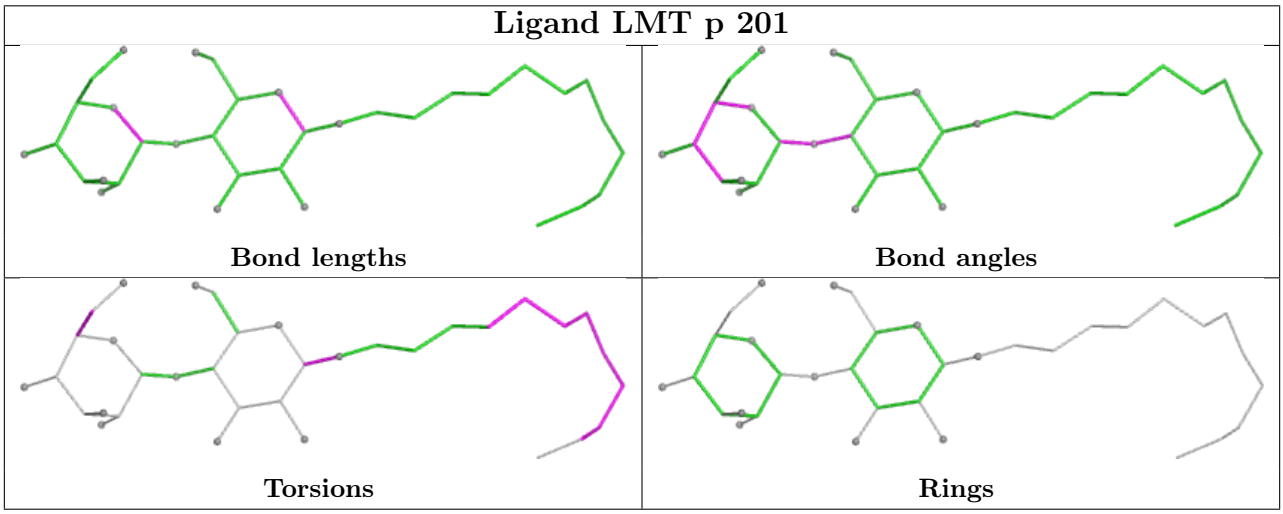


Rings

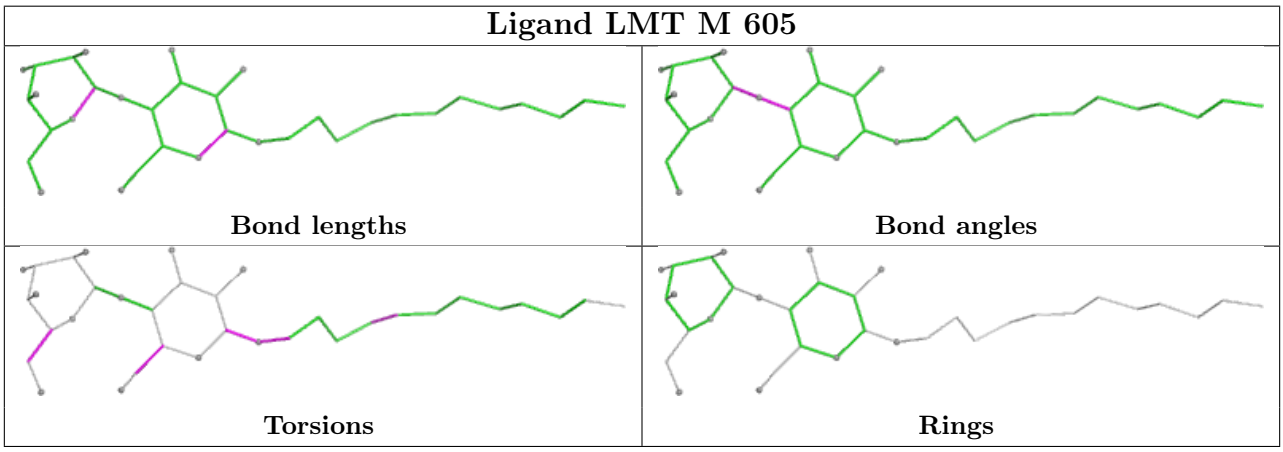
Ligand 3PE M 602



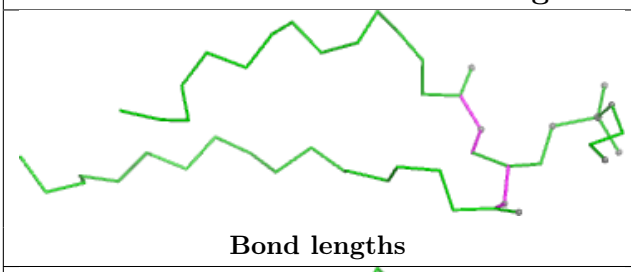
Ligand LMT p 201



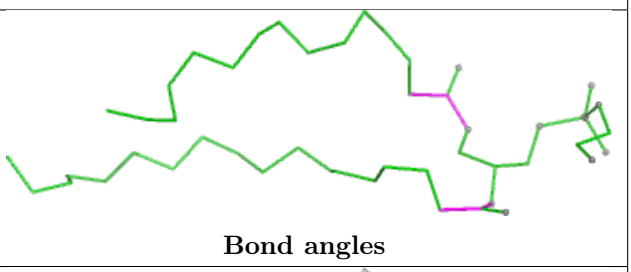
Ligand LMT M 605



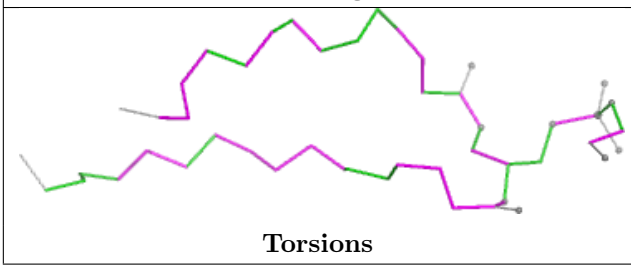
Ligand 3PE d 201



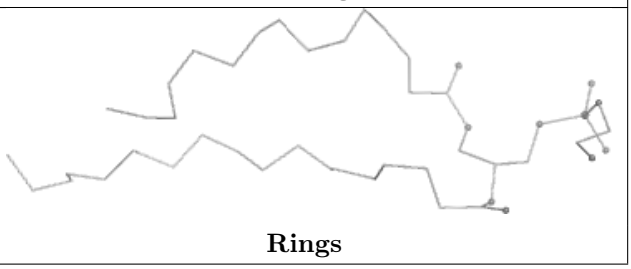
Bond lengths



Bond angles

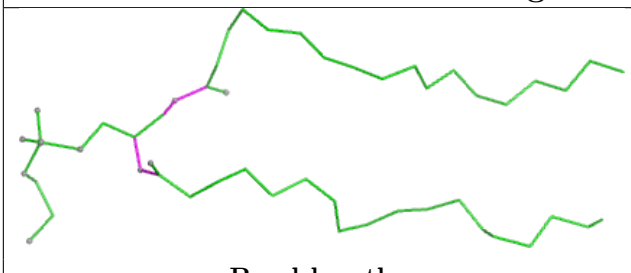


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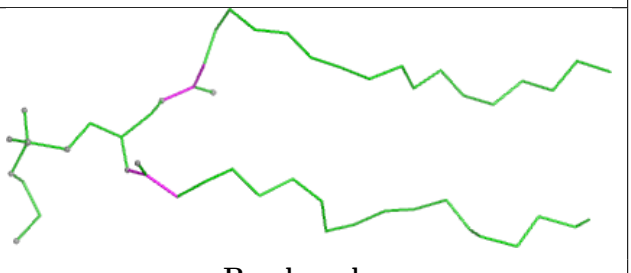


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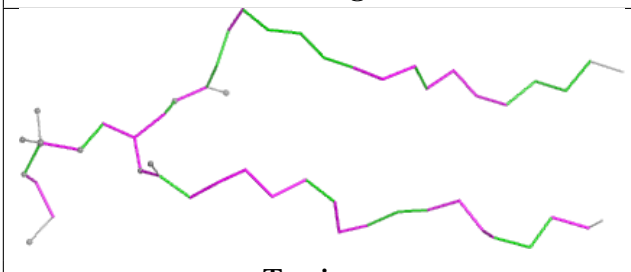
Ligand 3PE N 402



Bond lengths



Bond angles

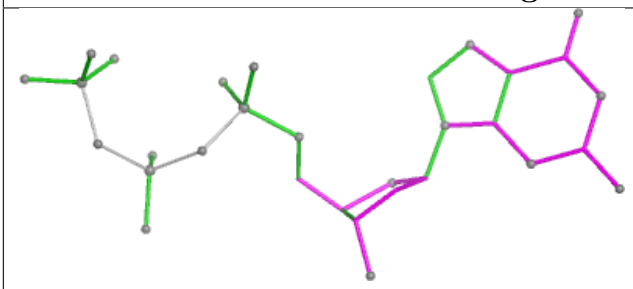


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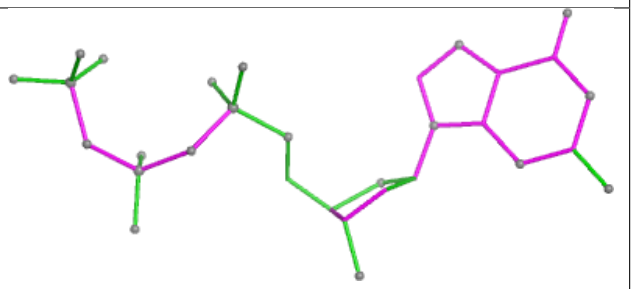


Rings

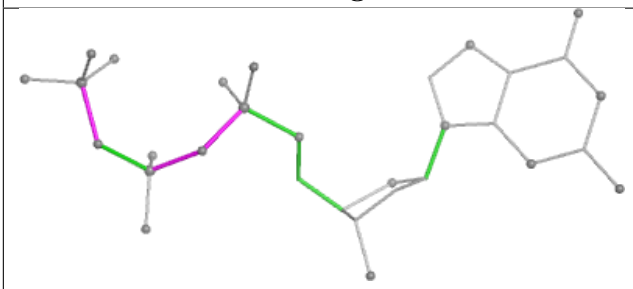
Ligand DGT O 402



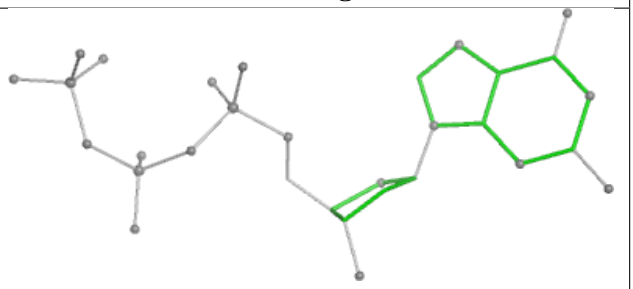
Bond lengths



Bond angles

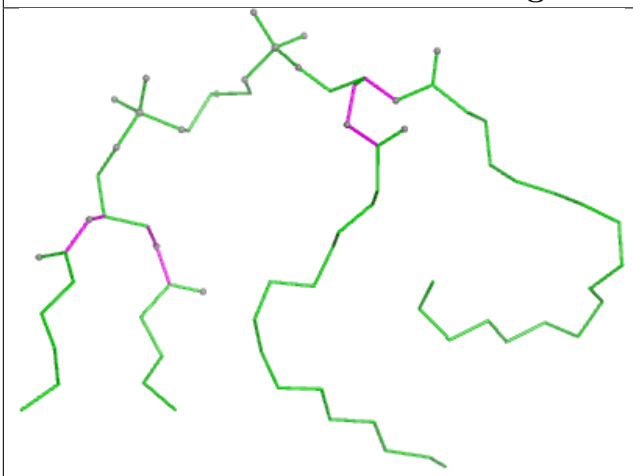


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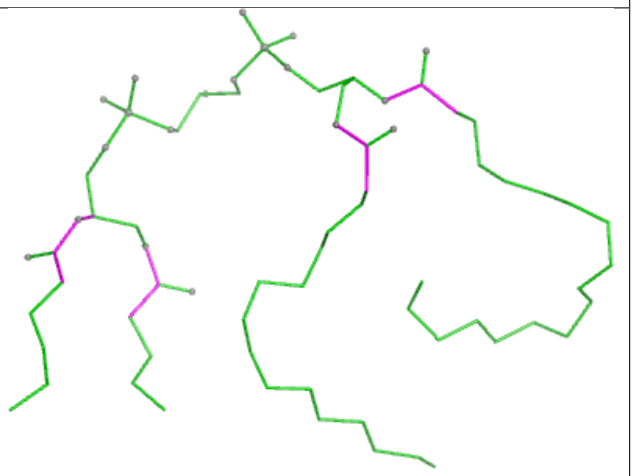


Rings

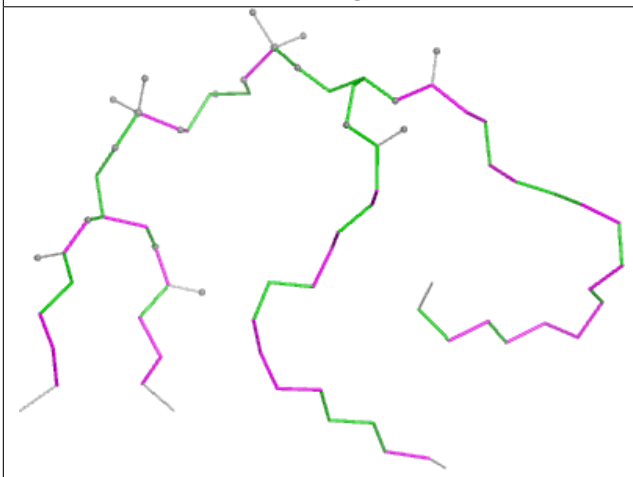
Ligand CDL d 202



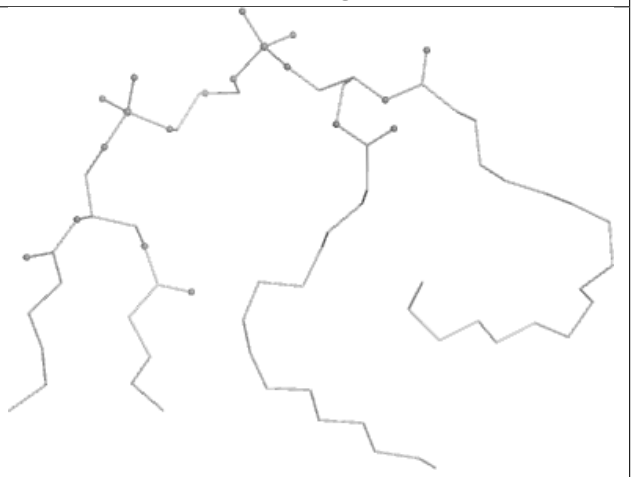
Bond lengths



Bond angles

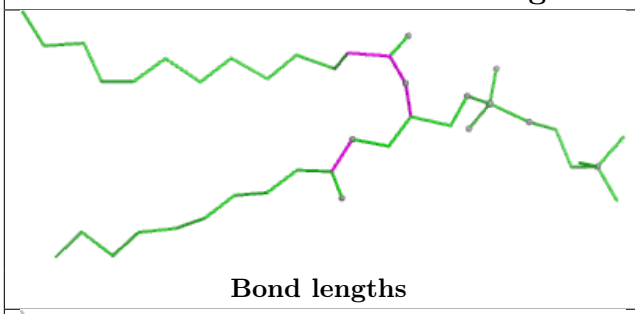


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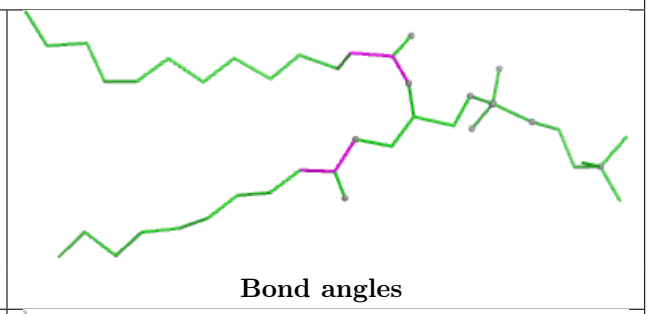


Rings

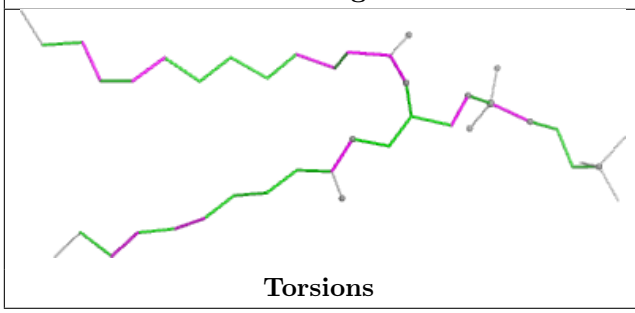
Ligand PC1 B 202



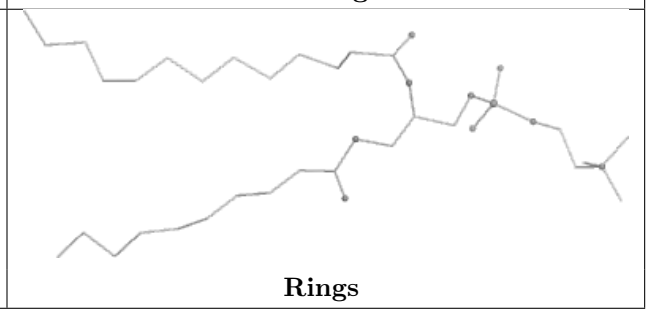
Bond lengths



Bond angles

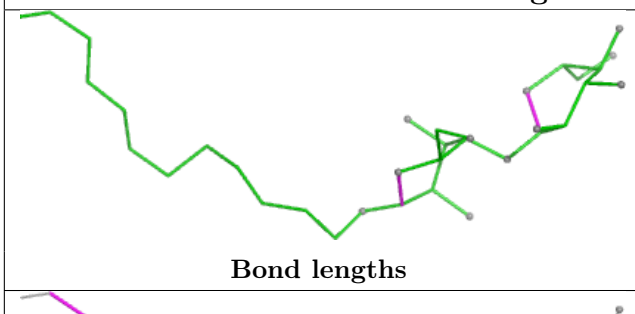


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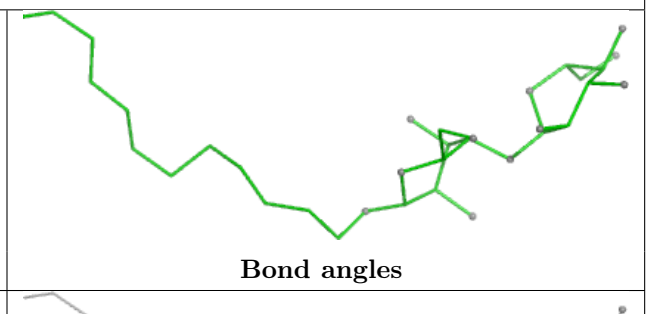


Rings

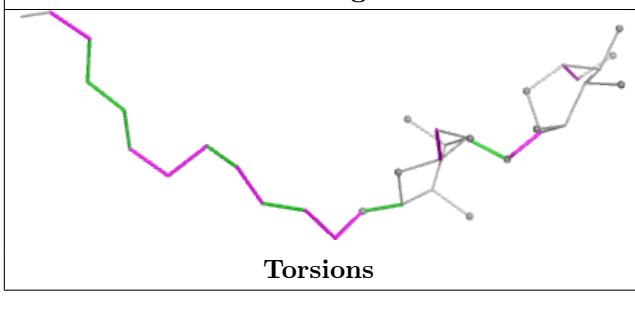
Ligand LMT i 201



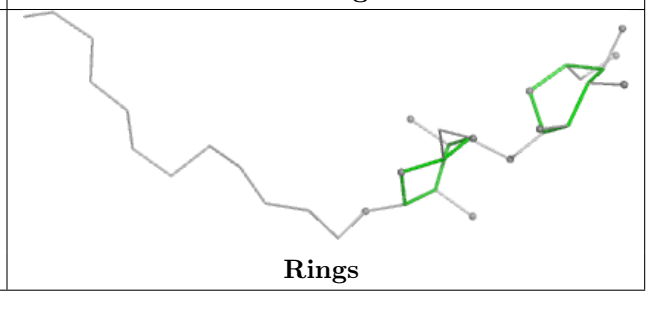
Bond lengths



Bond angles



Torsions

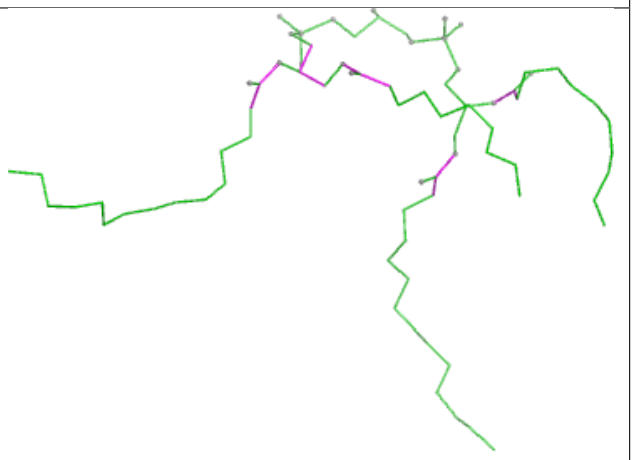


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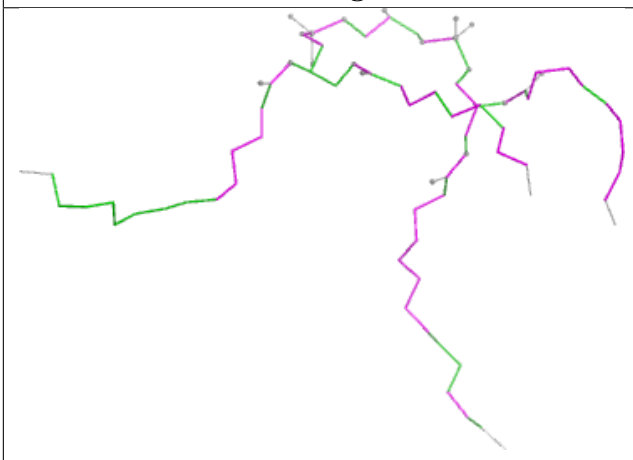
Ligand CDL h 201



Bond lengths



Bond angles

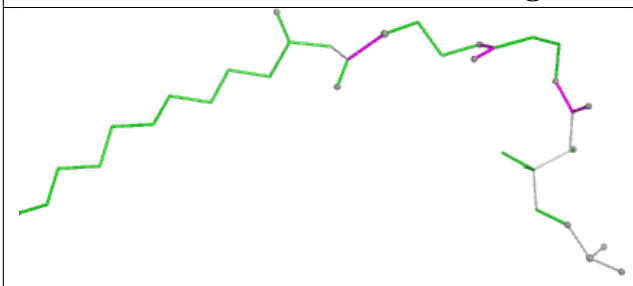


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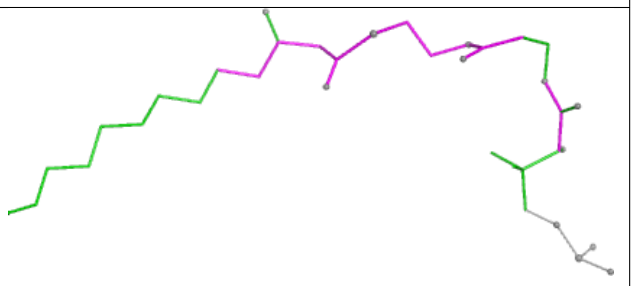


Rings

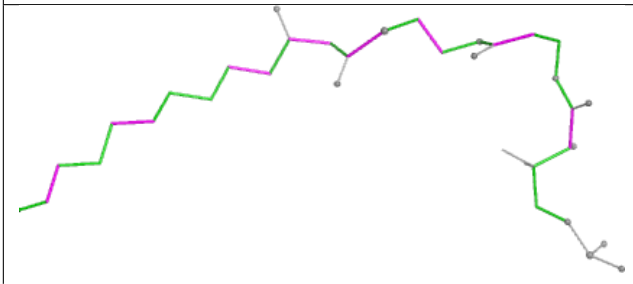
Ligand EHZ U 101



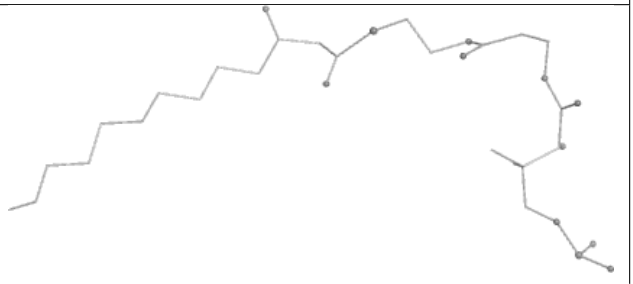
Bond lengths



Bond angles

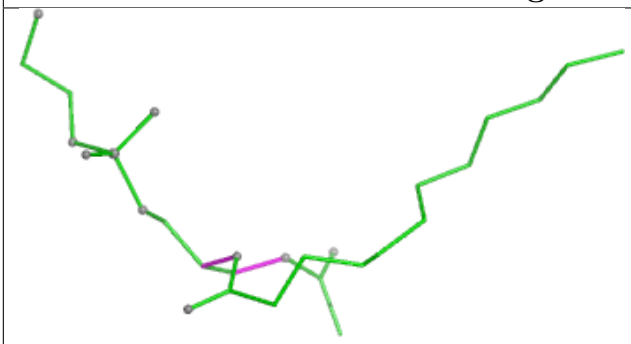


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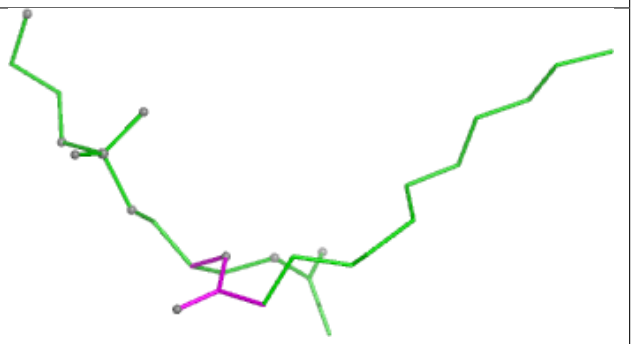


Rings

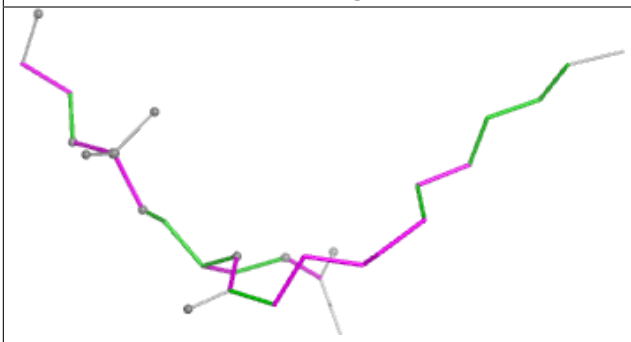
Ligand 3PE H 601



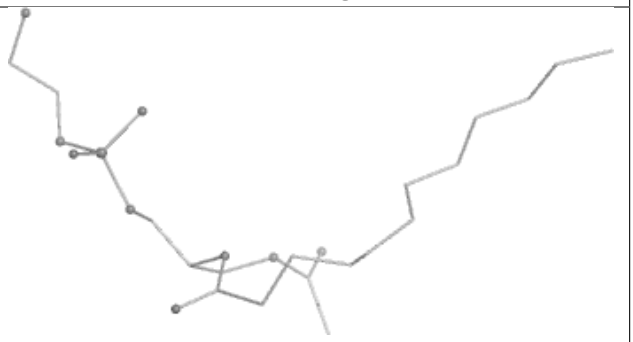
Bond lengths



Bond angles

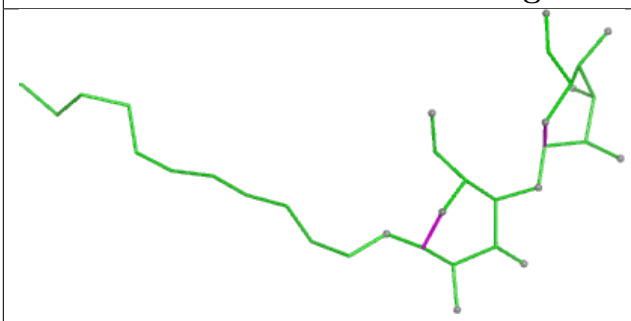


Torsions

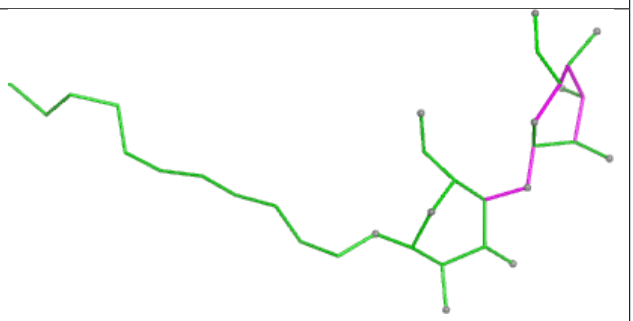


Rings

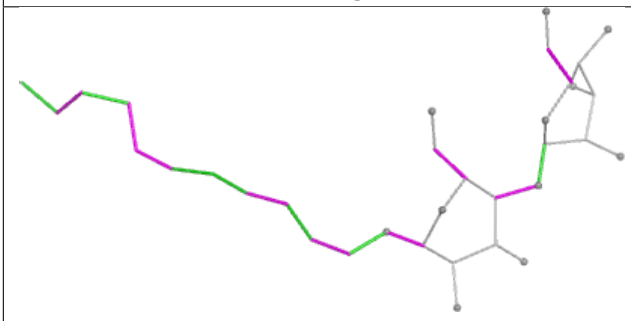
Ligand LMT L 704



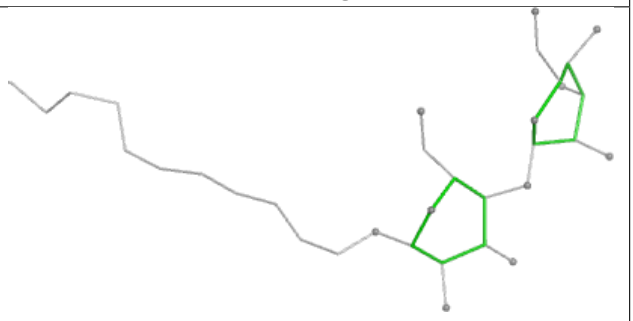
Bond lengths



Bond angles

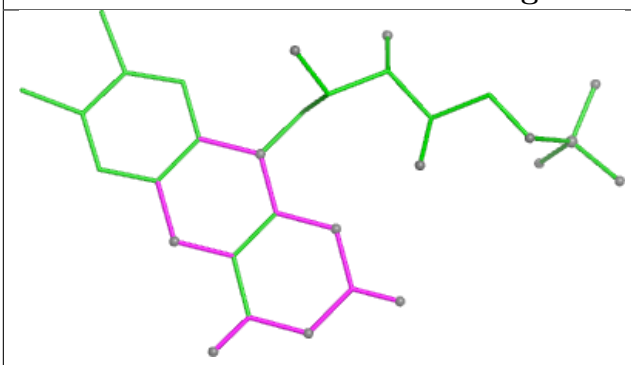


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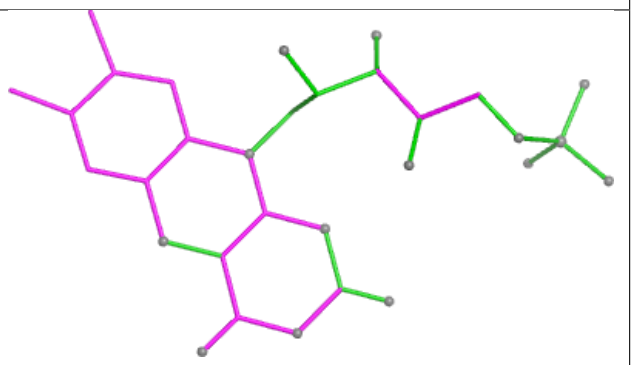


Rings

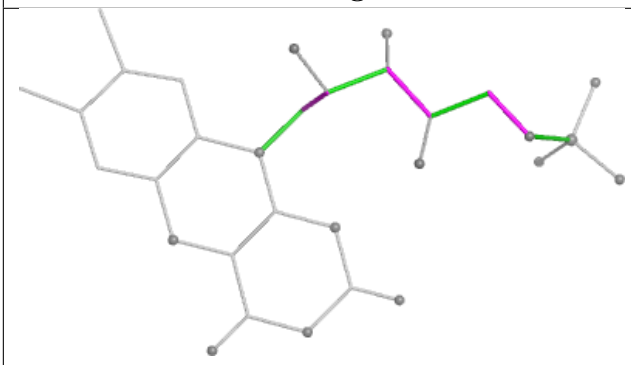
Ligand FMN F 501



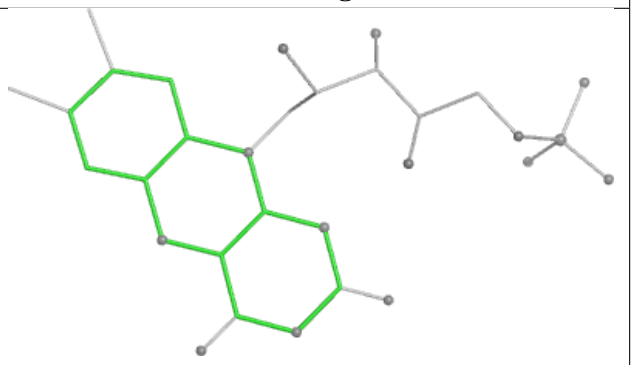
Bond lengths



Bond angles

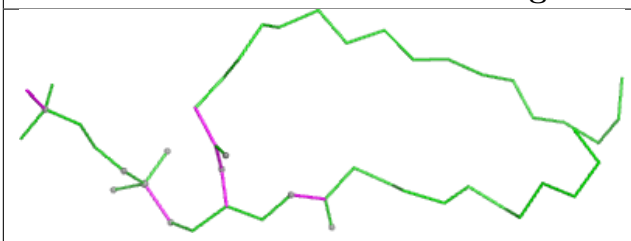


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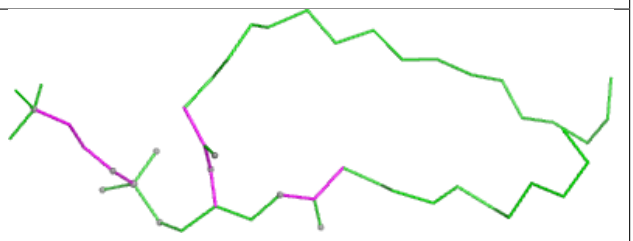


Rings

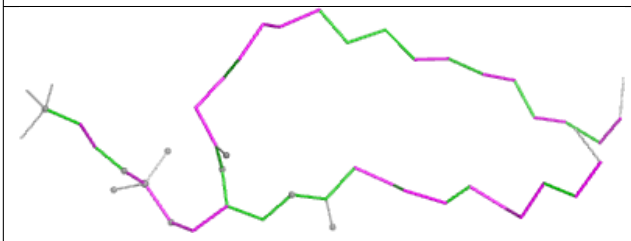
Ligand PC1 Z 200



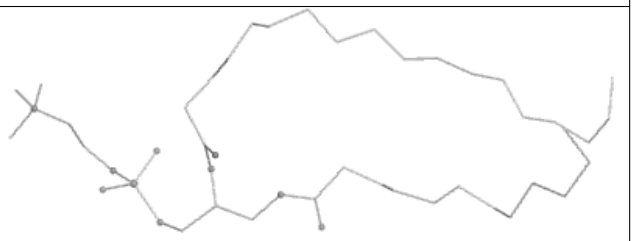
Bond lengths



Bond angles

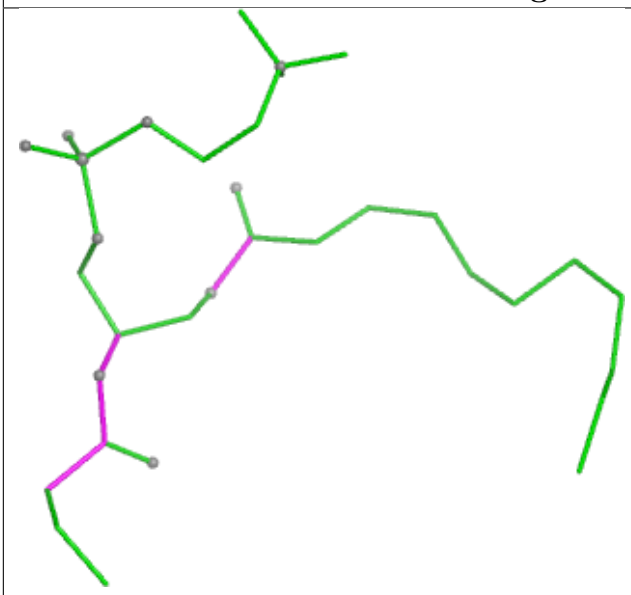


Torsions

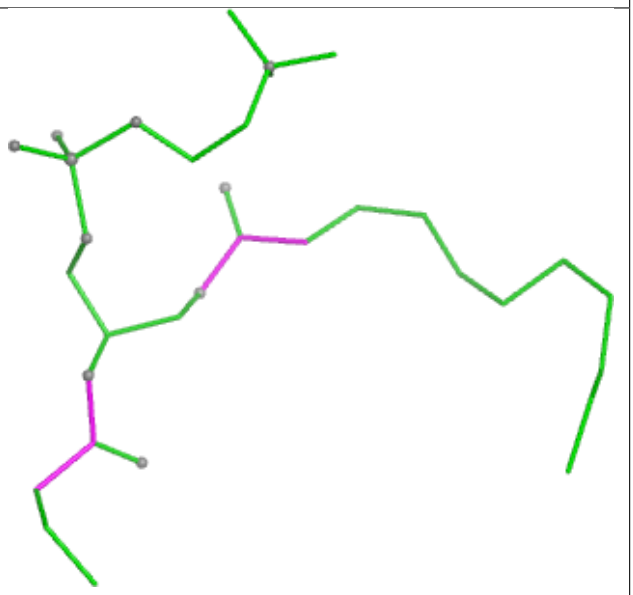


Rings

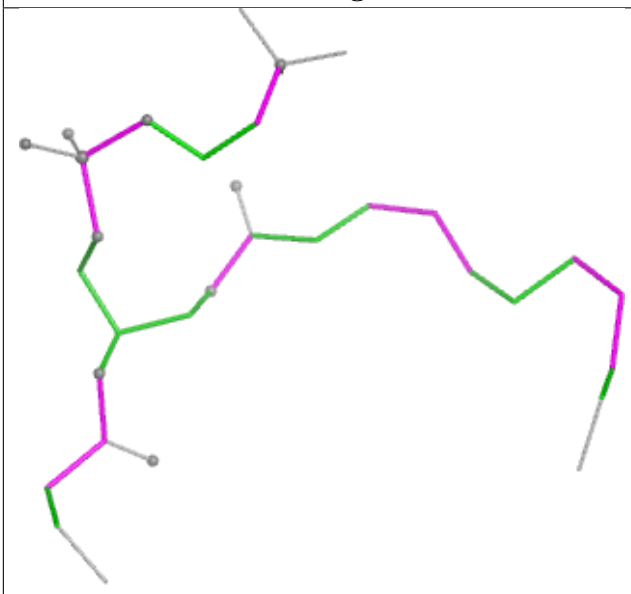
Ligand PC1 d 204



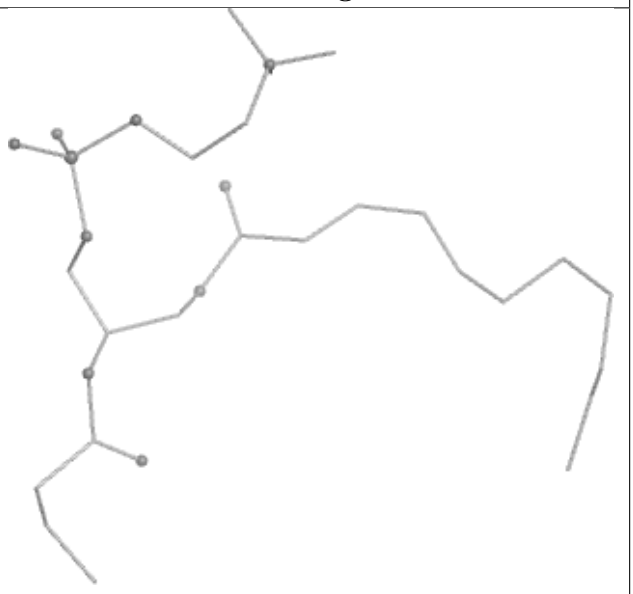
Bond lengths



Bond angles

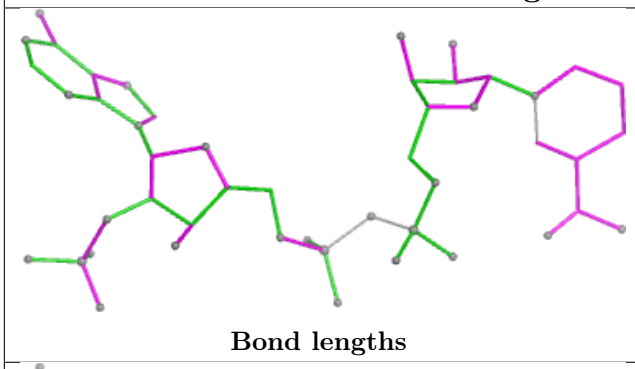


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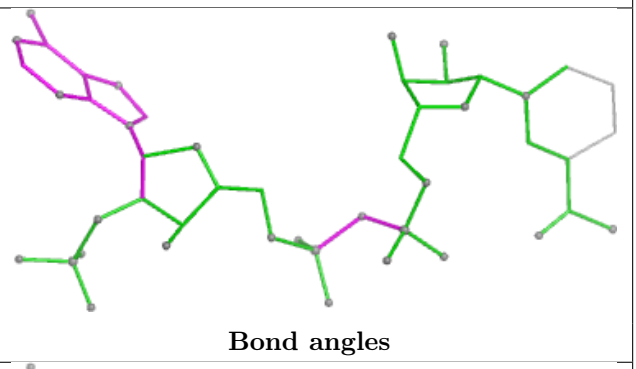


Rings

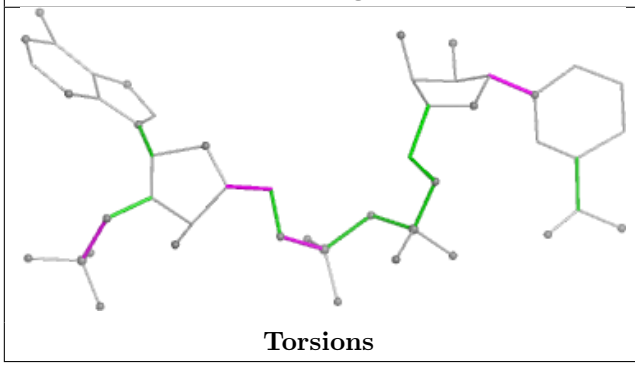
Ligand NDP P 401



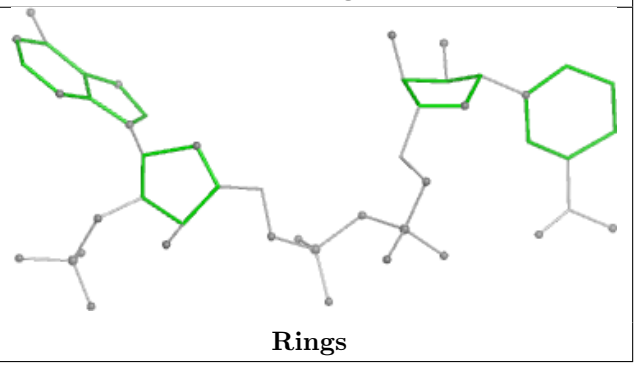
Bond lengths



Bond angles

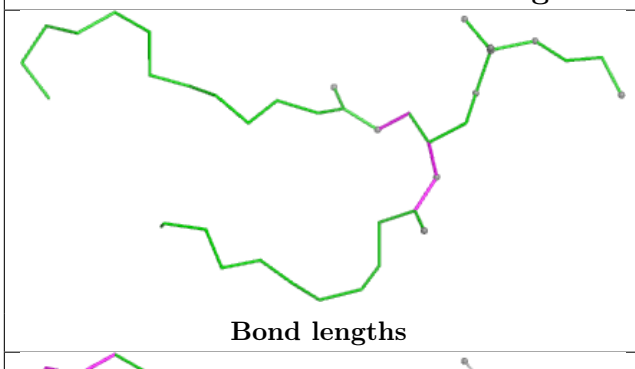


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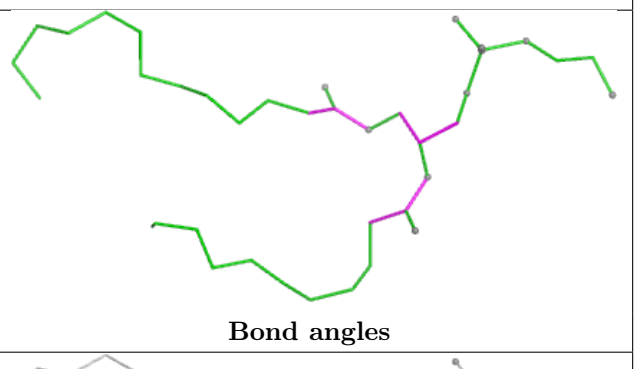


Rings

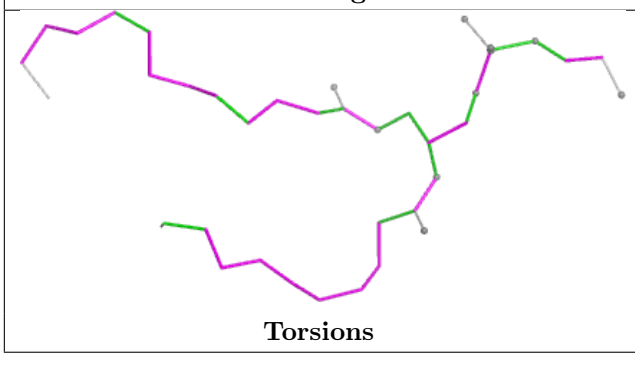
Ligand 3PE L 701



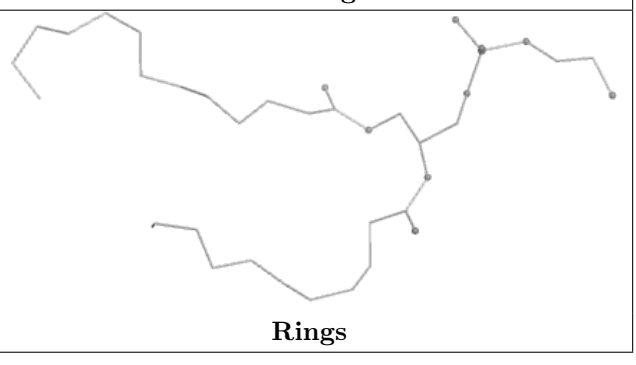
Bond lengths



Bond angles

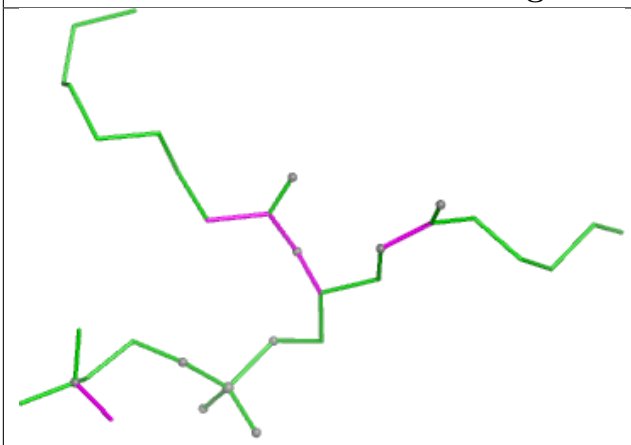


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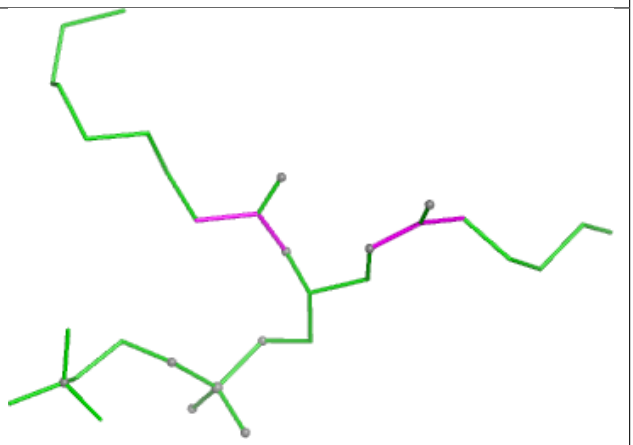


Rings

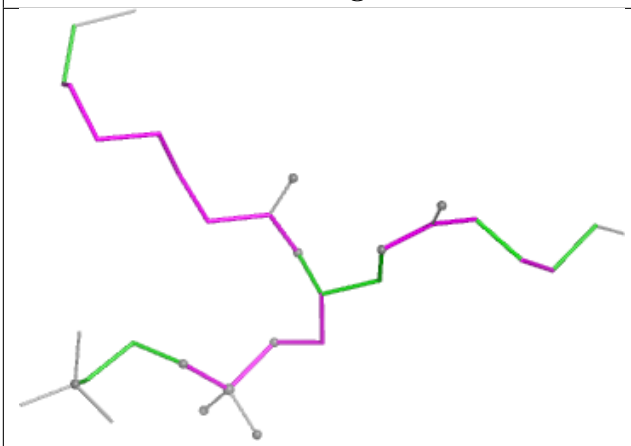
Ligand PC1 A 203



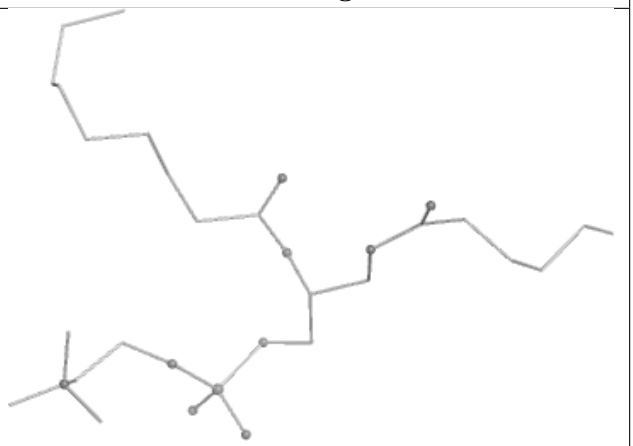
Bond lengths



Bond angles

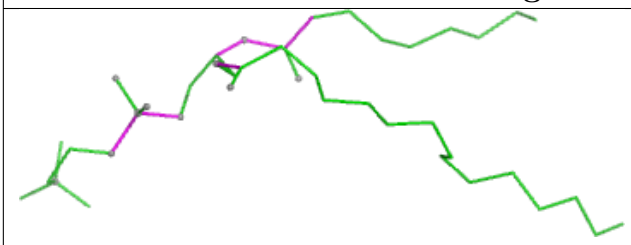


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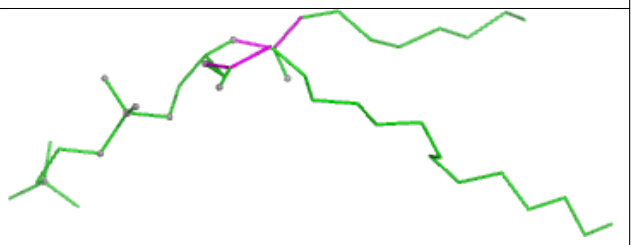


Rings

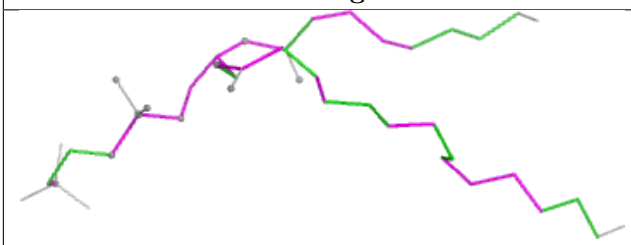
Ligand PC1 M 604



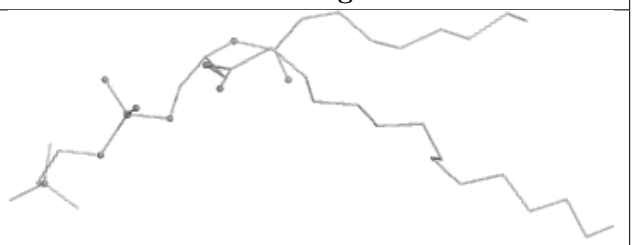
Bond lengths



Bond angles

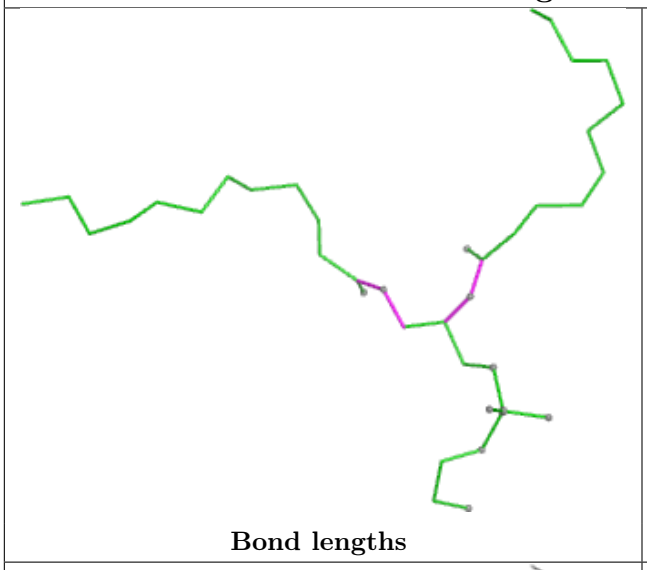


Torsions

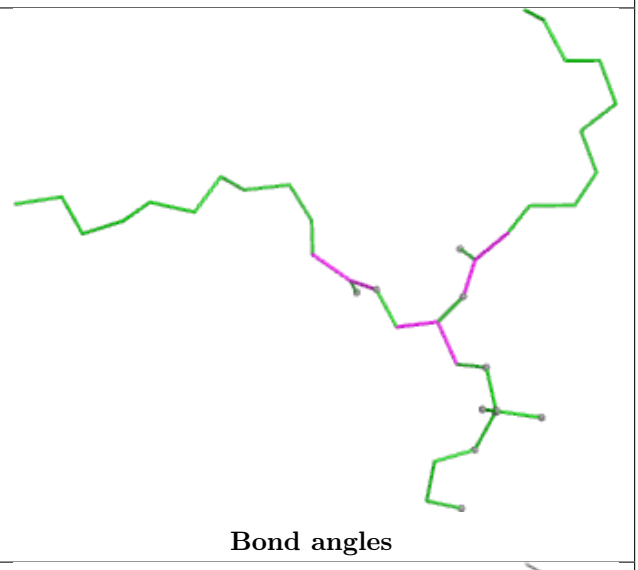


Rings

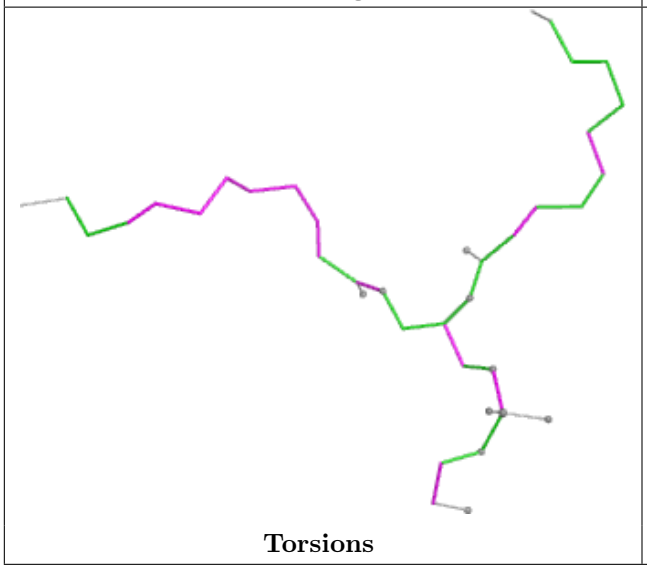
Ligand 3PE I 201



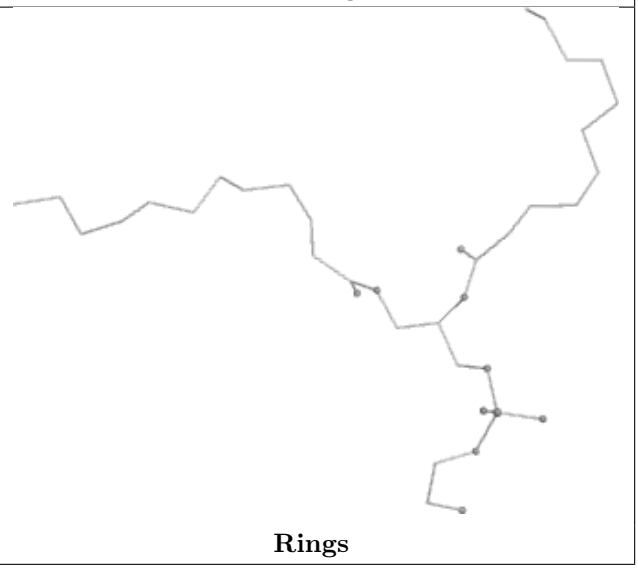
Bond lengths



Bond angles

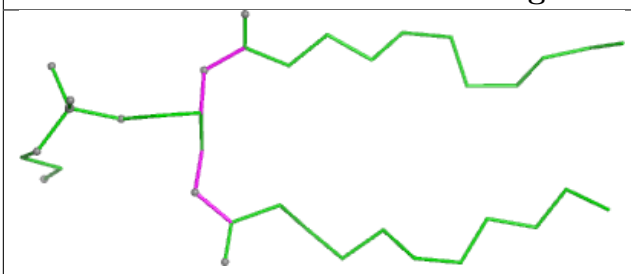


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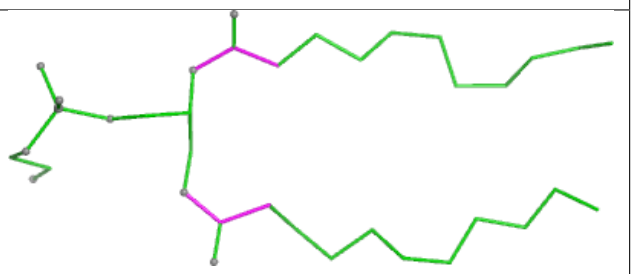


Rings

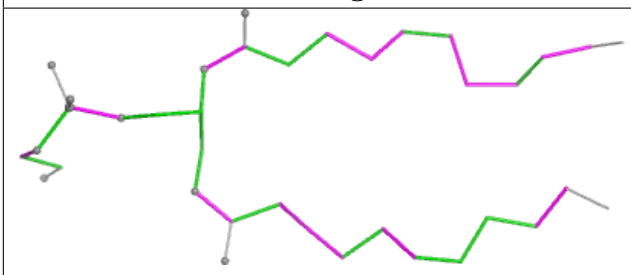
Ligand 3PE A 202



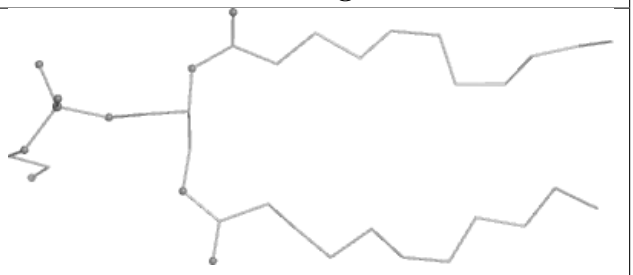
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

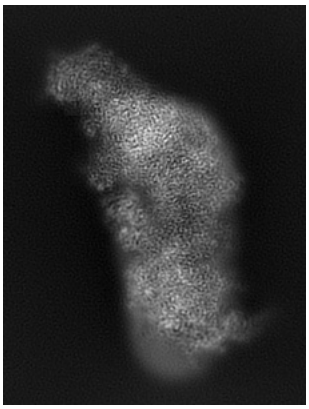
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-53490. These allow visual inspection of the internal detail of the map and identification of artifacts.

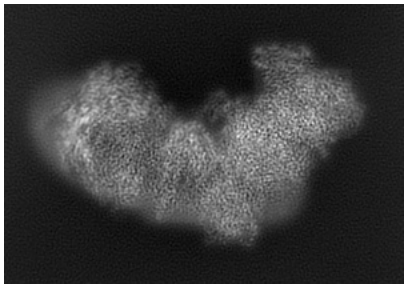
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

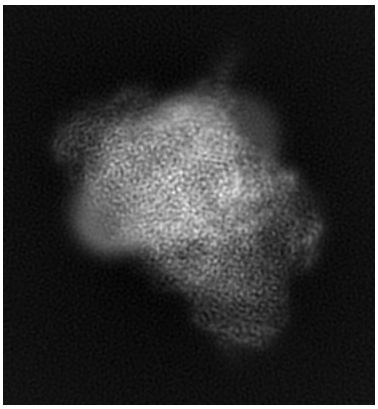
6.1.1 Primary map



X

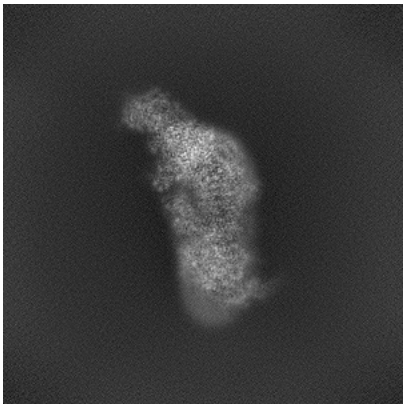


Y

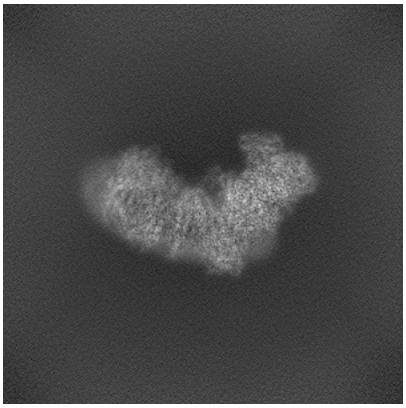


Z

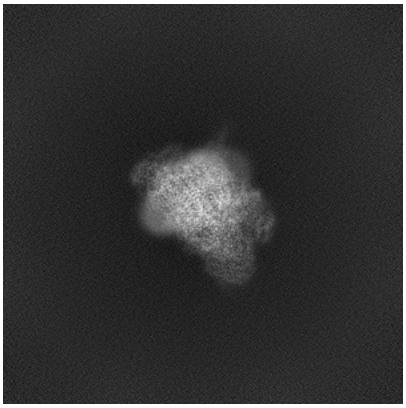
6.1.2 Raw map



X



Y

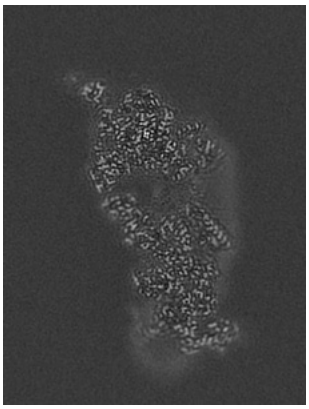


Z

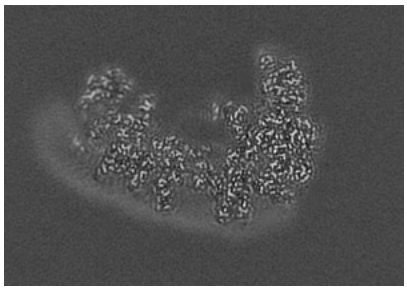
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

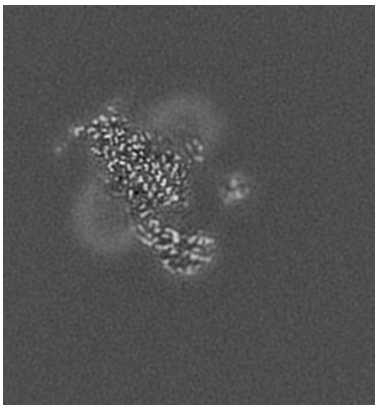
6.2.1 Primary map



X Index: 149

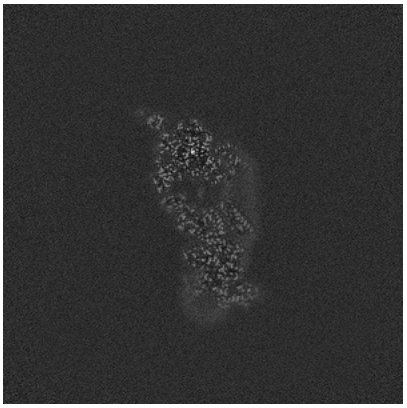


Y Index: 160

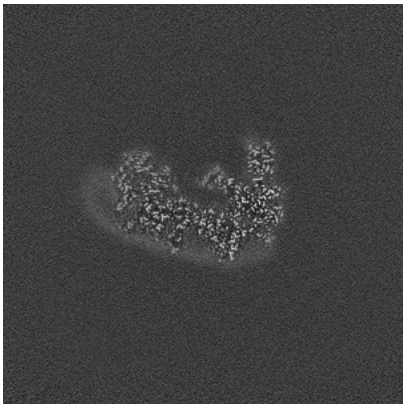


Z Index: 213

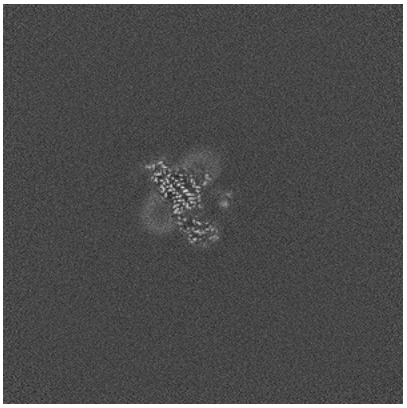
6.2.2 Raw map



X Index: 300



Y Index: 300

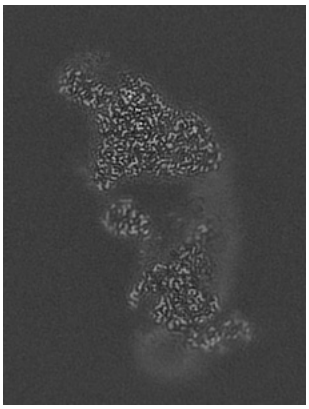


Z Index: 300

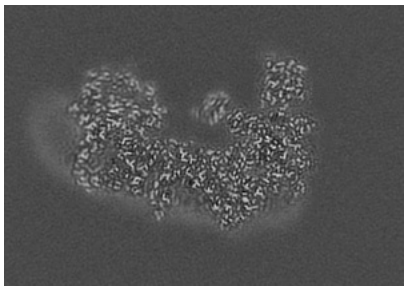
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

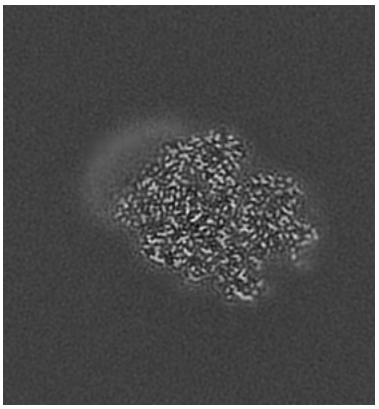
6.3.1 Primary map



X Index: 161

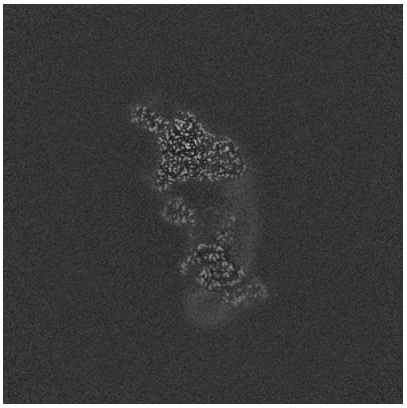


Y Index: 172

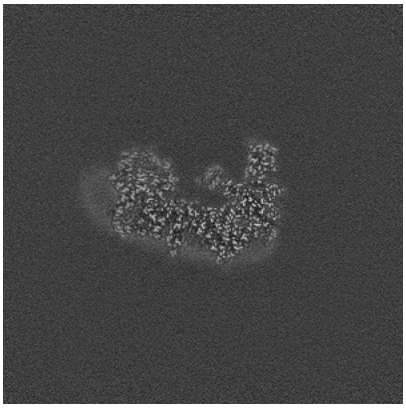


Z Index: 296

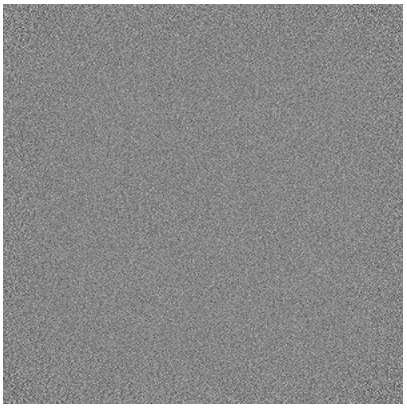
6.3.2 Raw map



X Index: 312



Y Index: 305

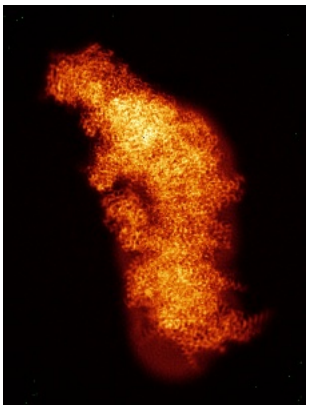


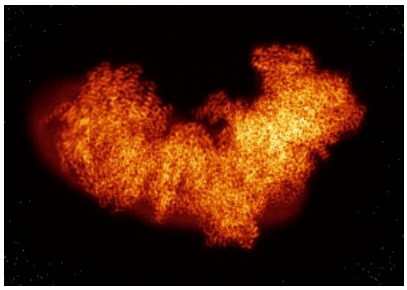
Z Index: 0

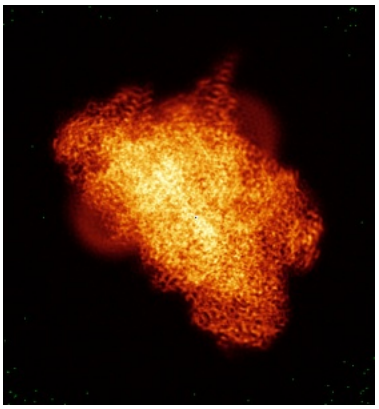
The images above show the largest variance slices of the map in three orthogonal directions.

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

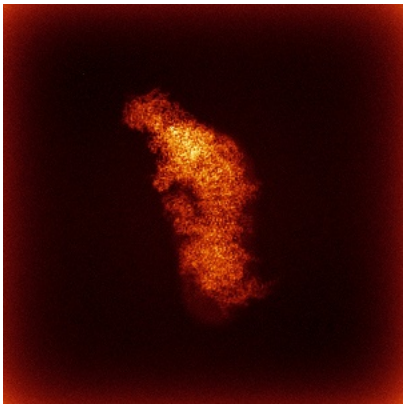
6.4.1 Primary map

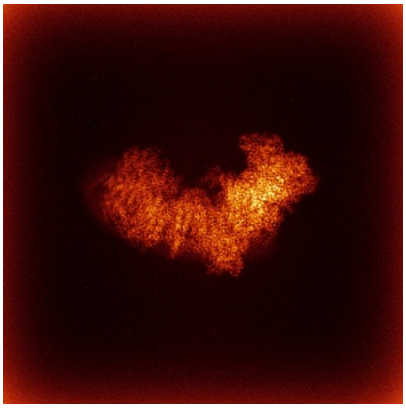

X

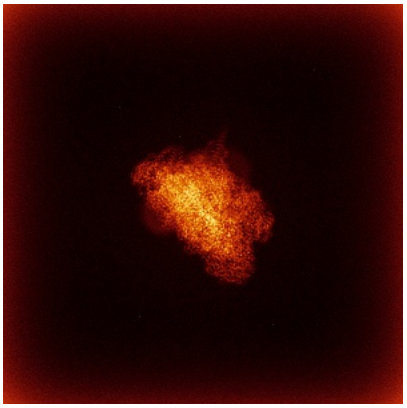

Y


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 8.57. 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.

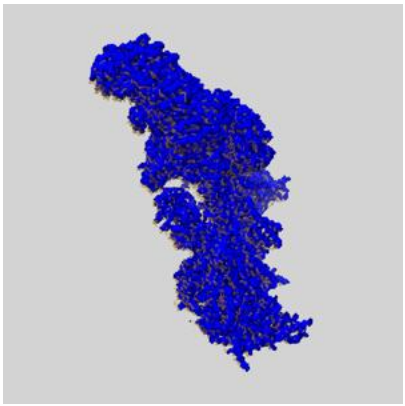
6.6 Mask visualisation (i)

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

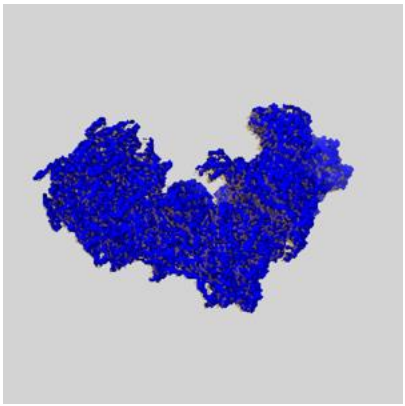
A mask typically either:

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

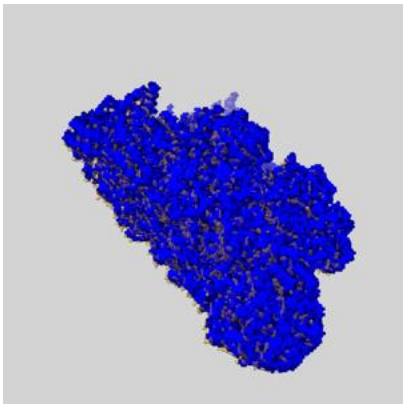
6.6.1 emd_53490_msk_1.map (i)



X



Y

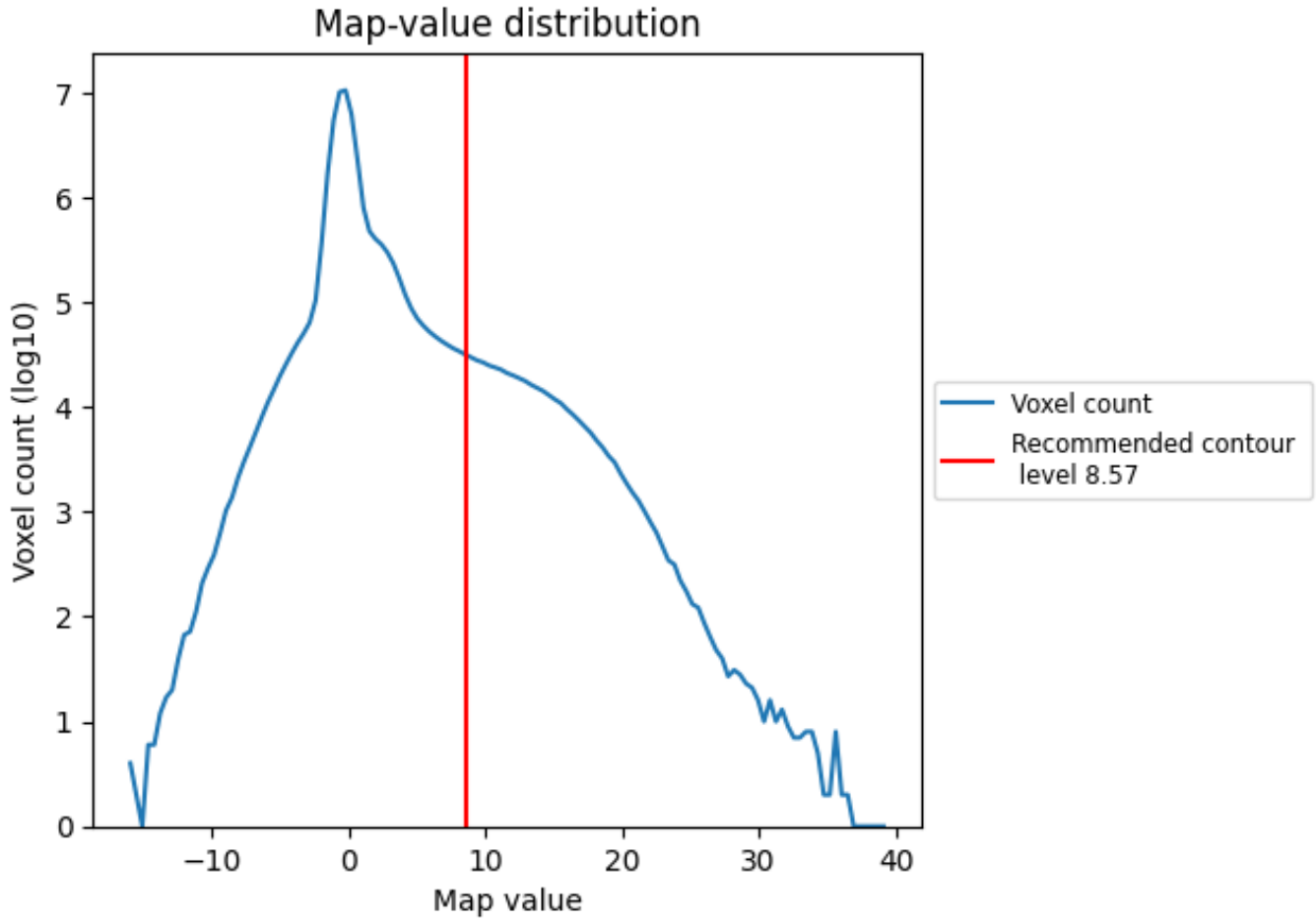


Z

7 Map analysis

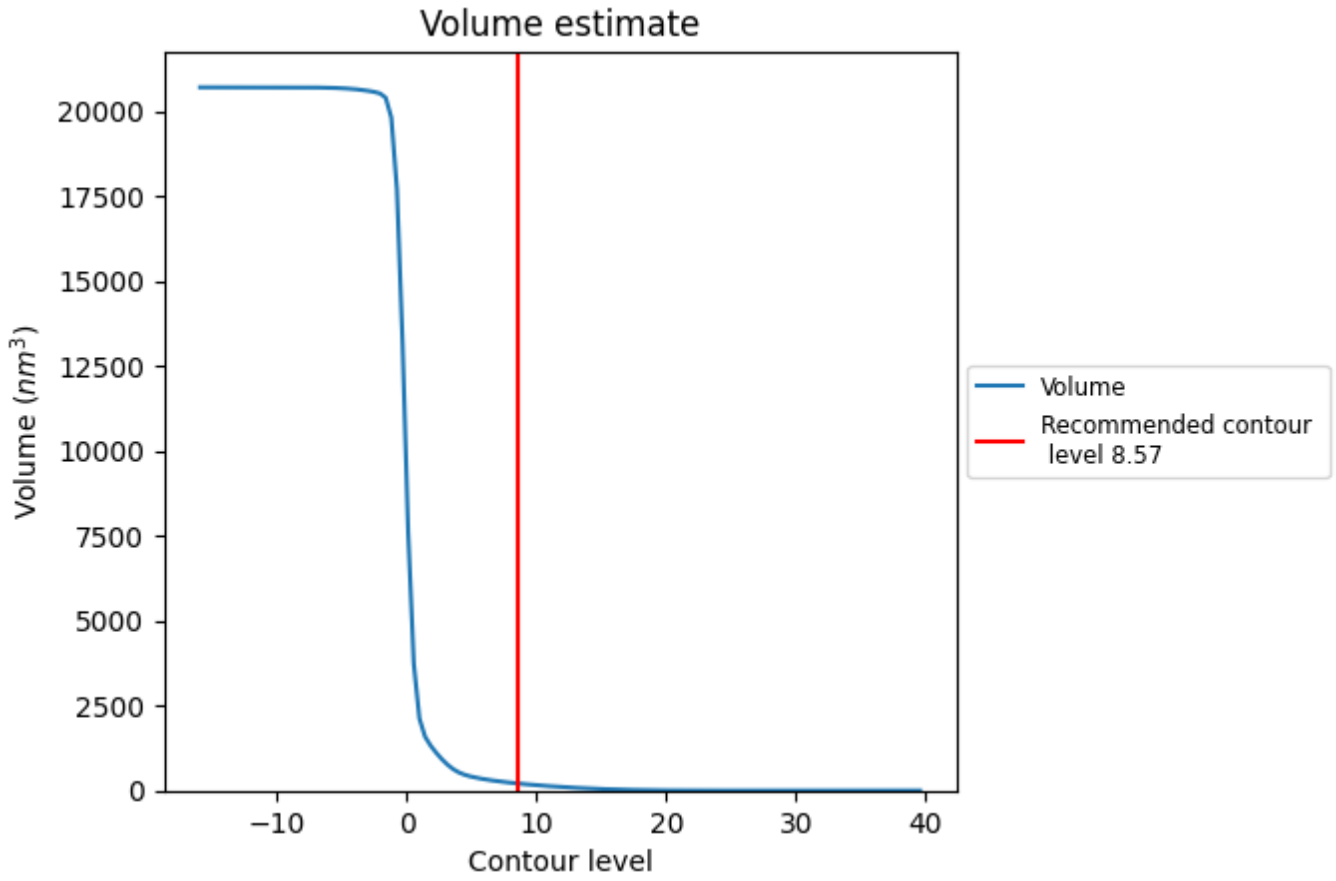
This section contains the results of statistical analysis of the map.

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 208 nm^3; this corresponds to an approximate mass of 188 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.

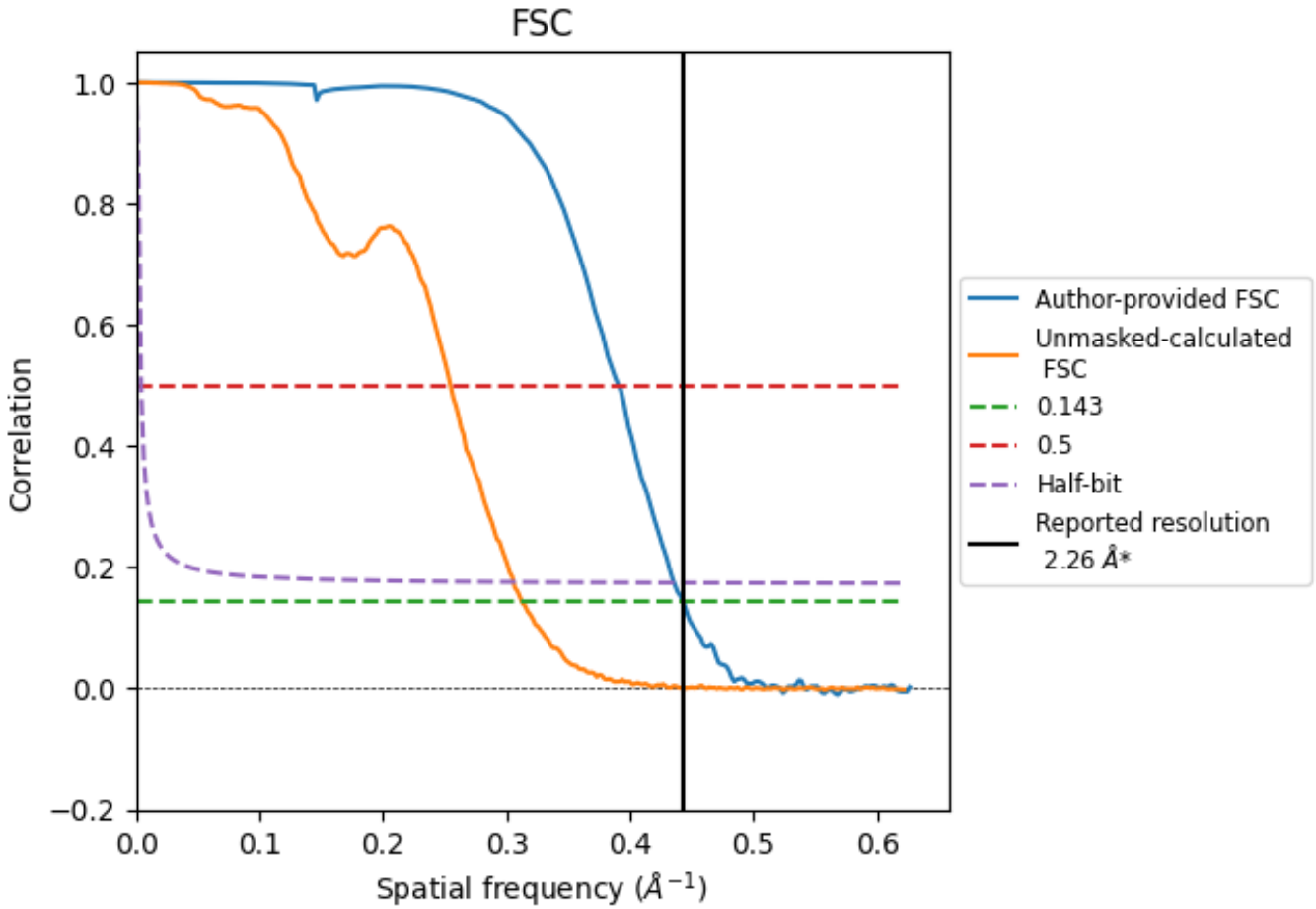
7.3 Rotationally averaged power spectrum

This section was not generated. The rotationally averaged power spectrum is only generated for cubic maps.

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 0.442 Å^{-1}

8.2 Resolution estimates (i)

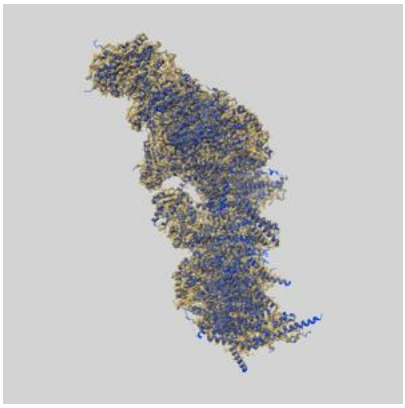
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.26	-	-
Author-provided FSC curve	2.26	2.56	2.29
Unmasked-calculated*	3.20	3.93	3.27

*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 3.20 differs from the reported value 2.26 by more than 10 %

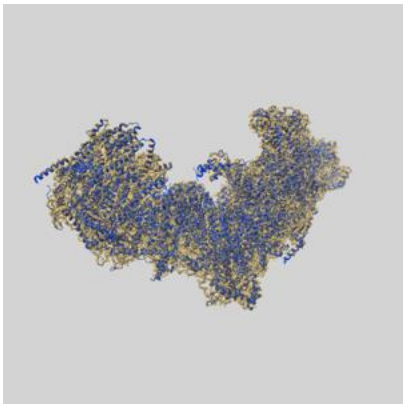
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-53490 and PDB model 9R12. Per-residue inclusion information can be found in section 3 on page 24.

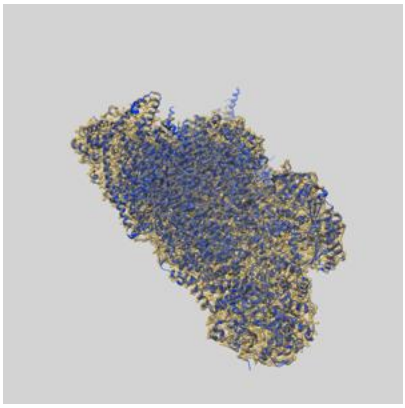
9.1 Map-model overlay



X



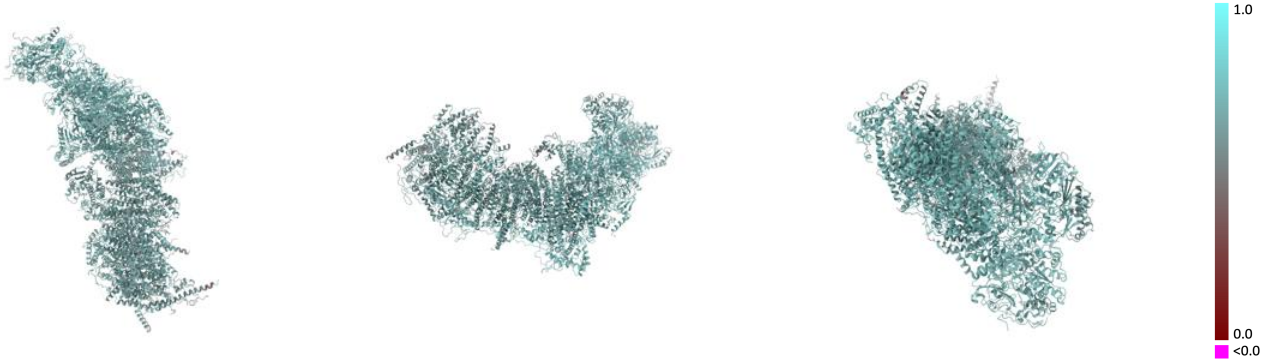
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 8.57 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

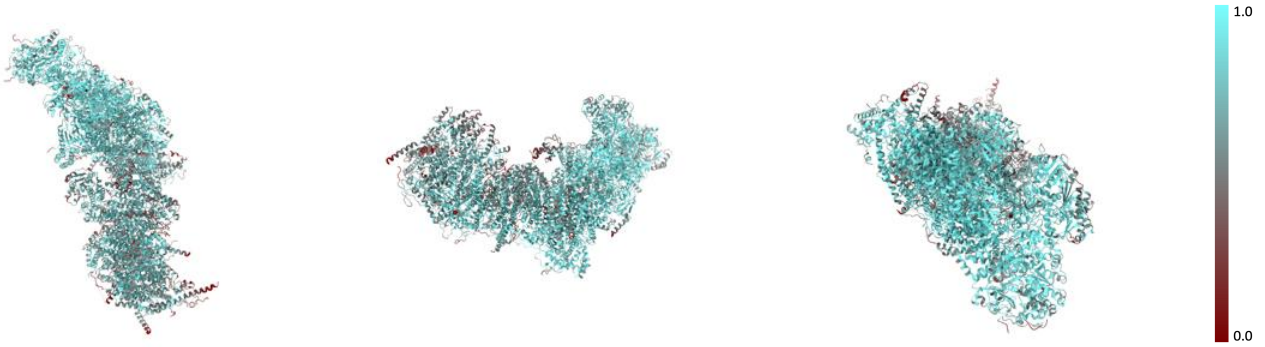
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

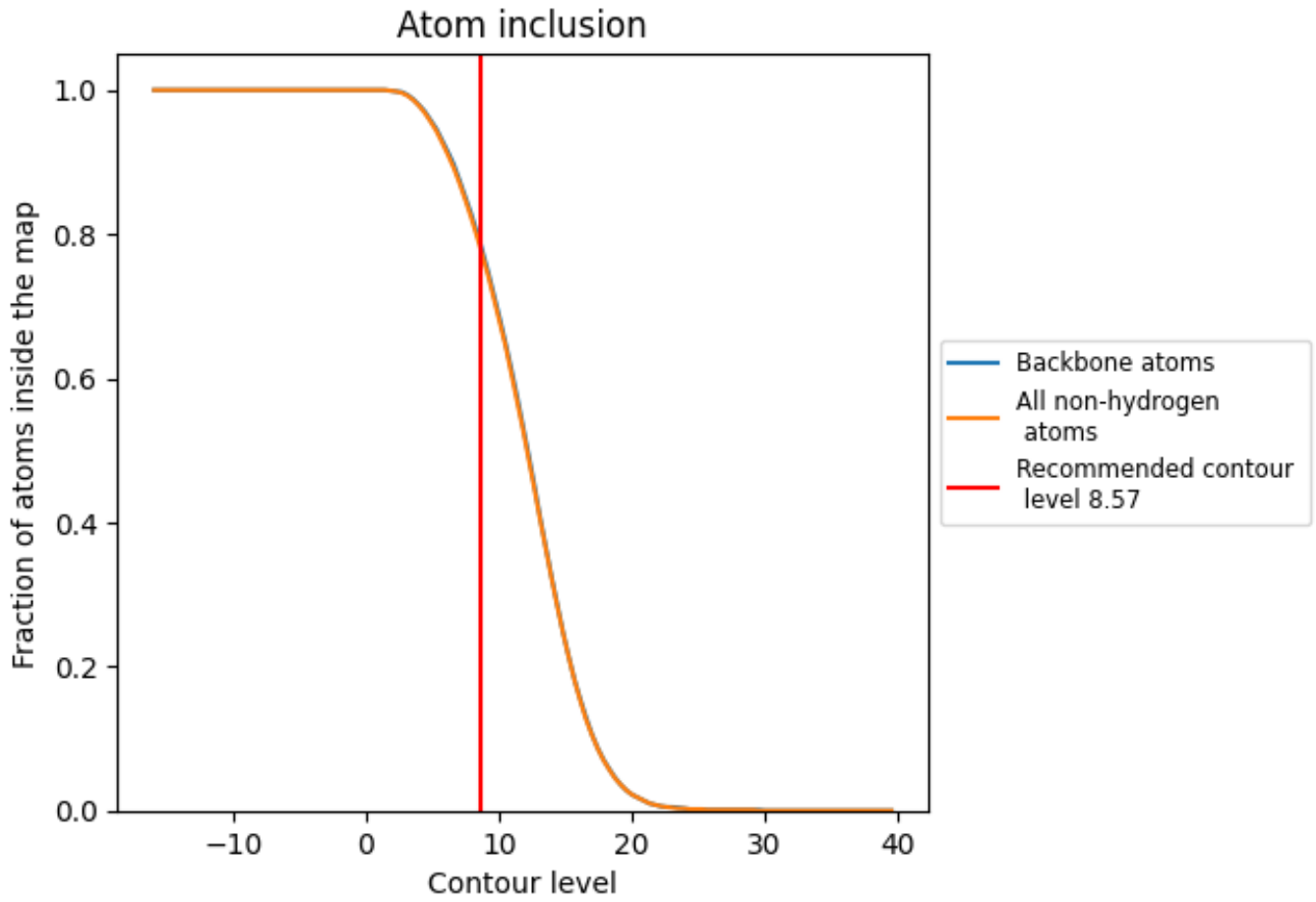
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (8.57).

9.4 Atom inclusion (i)



At the recommended contour level, 79% of all backbone atoms, 78% 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 (8.57) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7840	0.6810
A	0.7970	0.7070
B	0.9250	0.7280
C	0.9210	0.7270
D	0.9160	0.7270
E	0.7730	0.6740
F	0.8420	0.6780
G	0.8470	0.6950
H	0.9310	0.7270
I	0.9280	0.7300
J	0.8190	0.7050
K	0.8610	0.7170
L	0.7330	0.6600
M	0.8800	0.7070
N	0.9080	0.7180
O	0.7270	0.6470
P	0.8390	0.6940
Q	0.8300	0.7080
R	0.8260	0.7000
S	0.6980	0.6330
T	0.4050	0.5710
U	0.5660	0.6050
V	0.8040	0.6850
W	0.7890	0.6990
X	0.8040	0.6850
Y	0.6130	0.6450
Z	0.7850	0.6910
a	0.8850	0.7050
b	0.7140	0.6700
c	0.6540	0.6640
d	0.6760	0.6770
e	0.7430	0.6670
f	0.5700	0.6310
g	0.7110	0.6740
h	0.8020	0.6860



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Chain	Atom inclusion	Q-score
i	0.5510	0.5990
j	0.5590	0.5920
k	0.4980	0.5890
l	0.6660	0.6310
m	0.6360	0.6480
n	0.6740	0.6270
o	0.5080	0.5780
p	0.7230	0.6530
q	0.8050	0.7070
r	0.8020	0.7000
s	0.6600	0.6580