Concise and Scalable Total Syntheses of Lamellarin Z and other Natural Lamellarins: Regiocontrolled Assembly of the Central Pyrrole Core and Cross Dehydrogenative Coupling Enroute to the Pentacyclic Coumarin-Pyrrole-Isoquinoline Scaffold

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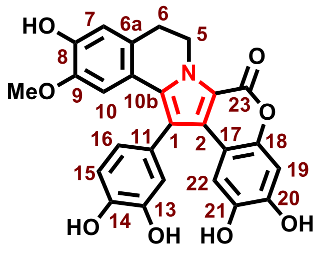
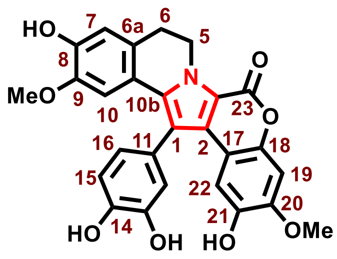
Table S1: ^{1}H & ^{13}C NMR comparison of presently synthesized lamellarin S with the reported data.



Carbon No.	^{1}H NMR (reported)[1]	^{1}H NMR (Synthesized)	^{13}C NMR (reported)[1]	^{13}C NMR (Synthesized)
1			116.4	116.4
2			129.9	129.9
3			113.8	113.8
5	4.67-4.53 (m, 2H)	4.70-4.54 (m, 2H)	43.5	43.5
6	2.97 (m, 2H)	3.00 (t, *J* = 6.8 Hz, 2H)	29.3	29.3
6a			128.7	128.7
7	6.67 (s, 1 H)	6.70 (s, 1 H)	115.8	115.8
8			148.0	148.1
9			147.2	147.3
10	6.59 (s, 1 H)	6.62 (s, 1 H)	110.4	110.4
10a			120.2	120.2
10b			138.5	138.6
11			128.1	128.1
12	6.86 (s, 1 H)	6.87 (d, 1 H, *J* = 2)	119.0	119.0
13			147.4	147.46
14			146.6[a]	146.7[a]
15	6.96 (d, 1 H, *J* = 8.0 Hz)	6.98 (d, 1 H, *J* = 8)	117.5	117.5
16	6.75 (d, 1 H, *J* = 8.0 Hz)	6.77 (dd, 1 H, *J* = 8.0, 2.0 Hz))	123.7	123.7
17			111.3	111.3
18			147.4	147.41
19	6.72 (s, 1 H)	6.75 (s, 1 H)	104.2	104.2
20			146.7[b]	146.73[b]
21			143.4	143.4
22	6.81 (s, 1 H)	6.83 (s, 1 H)	109.8	109.8
23			157.6	157.6
OMe	3.36 (s, 3 H)	3.38 (s, 3 H)	55.6	55.6

[a-b] interchangeable assignments.

Table S2: ^{1}H and ^{13}C NMR comparison of presently synthesized lamellarin Z with the reported data.

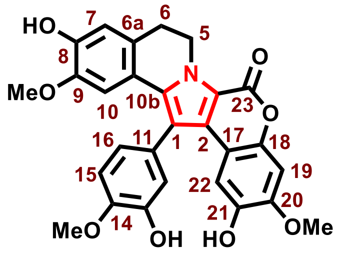


Carbon No.	^{1}H NMR (reported)[2]	^{1}H NMR (Synthesized)	^{13}C NMR (reported)[2]	^{13}C NMR (Synthesized)
1			114.7	114.7
2			126.9	126.9
3			112.4	112.5
5	4.66 (dm, 1 H, *J* = 13.2 Hz), 4.52 (dm, 1 H, *J* = 13.2 Hz)	4.71-4.65 (m, 1 H), 4.55-4.49 (m, 1 H)	41.9	41.9
6	2.98 (m, 2H)	2.97 (m, 2H)	27.5	27.5
6a			127.1	127.1
7	6.71 (s, 1 H)	6.72 (s, 1 H)	115.2	115.2
8			147.0	146.9
9			145.9	145.9
10	6.54 (s, 1 H)	6.55 (s, 1 H)	109.3	109.3
10a			118.0	118.1
10b			136.0	136.0
11			125.3	125.4
12	6.74 (d, 1 H, *J* = 2.4 Hz)	6.76 (d, 1 H, *J* = 2.0 Hz)	117.8	117.7
13			146.2	146.1
14			145.4	145.3
15	6.92 (d, 1 H, *J* = 7.8 Hz)	6.93 (d, 1 H, *J* = 8.0 Hz)	116.7	116.6
16	6.67 (dd, 1 H, *J* = 7.8, 2.4 Hz)	6.69 (dd, 1 H, *J* = 8.0, 2.0 Hz)	121.4	121.5
17			110.2	110.2
18			144.6[e]	144.6[e]
19	6.99 (s, 1 H)	7.00 (s, 1 H)	100.7	100.7
20			147.8	147.8
21			142.8[f]	142.8[f]
22	6.70 (s, 1 H)	6.70 (s, 1 H)	108.4	108.4
23			154.3	154.3
OMe-9	3.29 (s, 3 H)	3.29 (s, 3 H)	54.7	54.6
OMe-20	3.79 (s, 3 H)	3.80 (s, 3 H)	55.8	55.8
OH-8		9.34 (br s, 1 H)[a]		
OH-13		9.12 (br s, 1 H)[b]		
OH-14		9.08 (br s, 1 H)[c]		
OH-21		8.92 (br s, 1 H)[d]		

[a-d] Interchangeable proton assignment & protons with variable position

[e-f] Interchangeable carbon assignment

Table S3: ^{1}H and ^{13}C NMR comparison of presently synthesized lamellarin G with the reported data.

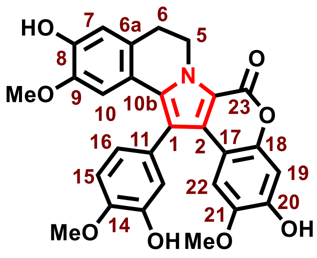


Carbon No.	**^{1}H NMR** (reported)[3]	**^{1}H NMR** (Synthesized)	**^{13}C NMR** (reported)[3]	**^{13}C NMR** (Synthesized)
1			114.2	114.4
2			126.7	126.9
3			112.4	112.6
5	4.70-4.53 (m, 2 H)	4.69-4.63 (m, 1 H); 4.57-4.51 (m, 1H)	41.9	42.0
6	3.00 (m, 2H)	2.98 (t, 2H, *J* = 6.8 Hz)	27.4	27.6
6a			127.0	127.2
7	6.73 (s, 1 H)	6.72 (s, 1 H)	115.2	115.3
8			146.9	147.0
9			145.8	146.0
10	6.49 (s, 1 H)	6.48 (s, 1 H)	109.0	109.2
10a			117.8	118.0
10b			135.9	136.1
11			127.1	127.2
12	6.83 (s, 1 H)	6.81 (d, 1 H, *J* = 2.0 Hz)	117.6	117.6
13			147.3	147.5
14			147.3	147.7
15	7.13 (d, 1 H, *J* = 8.0 Hz)	7.13 (d, 1 H, *J* = 8.0 Hz)	113.3	113.3
16	6.84 (d, 1 H, *J* = 8.0 Hz)	6.83 (dd, 1 H, *J* = 8.0, 2.0 Hz)	121.3	121.5
17			110.0	110.1
18			144.5[d]	144.7[d]
19	7.01 (s, 1 H)	7.00 (s, 1 H)	100.6	100.8
20			147.7[e]	147.9[e]
21			142.6	142.8
22	6.68 (s, 1 H)	6.66 (s, 1 H)	108.2	108.3
23			154.2	154.4
OMe-20	3.81 (s, 3 H)	3.80 (s, 3 H)	55.7	55.9
OMe-14	3.86 (s, 3 H)	3.85 (s, 3 H)	55.6	55.8
OMe-9	3.27 (s, 3 H)	3.25 (s, 3 H)	54.5	54.6
OH-8		9.43 (br s, 1 H)[a]		
OH-13		9.30 (br s, 1 H)[b]		
OH-21		8.99 (br s, 1 H)[c]		

[a-c] Interchangeable proton assignment & protons with variable position

[e-f] Interchangeable carbon assignment

Table S4: ^{1}H and ^{13}C NMR comparison of presently synthesized lamellarin L with the reported data.

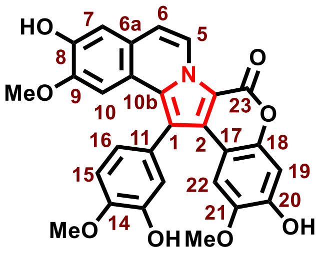


lamellarin L

Carbon No.	^{1}H NMR (reported)[4]	^{1}H NMR (Synthesized)	^{13}C NMR (reported)[4]	^{13}C NMR (Synthesized)
1			115.2	115.5
2			127.3	127.7
3			113.4	113.6
5	4.69-4.60 (m, 1H); 4.60-4.51 (m, 1H)	4.65–4.58 (m, 1H) 4.56-4.50 (m, 1H)	41.9	42.2
6	3.01 (t, 2H, J = 6.8 Hz)	2.99 (t, 2H, J = 6.8 Hz,)	27.4	27.7
6a			127.1	127.4
7	6.75 (s, 1H)	6.74 (s, 1 H)	112.2	112.5
8			147.0	147.3
9			145.9	146.2
10	6.68 (s, 1H)	6.67 (s, 1 H)	108.6	108.9
10a			117.9	118.2
10b			135.7	136.0
11			127.3	127.5
12	6.92-6.88 (m, 1H)	6.90-6.87 (m, 1H)	113.8	114.2
13			147.5	147.8
14			147.4	147.7
15	7.16 (d, J = 7.9 Hz)	7.15 (d, J = 8.0 Hz)	117.8	118.0
16	6.92-6.88 (m, 1H)	6.90-6.87 (m, 1H)	121.6	121.9
17			109.2	109.4
18			146.7	147.0
19	6.80 (s, 1H)	6.79 (s, 1H)	103.5	103.8
20			145.6	145.8
21			144.4	144.7
22	6.68 (s, 1H)	6.65 (s, 1 H)	104.9	105.2
23			154.2	154.5
OMe-21	3.38 (s, 3 H)	3.36 (s, 3 H)	55.0	55.2
OMe-14	3.83 (s, 3 H)	3.81 (s, 3 H)	56.0	56.2
OMe-9	3.29 (s, 3 H)	3.27 (s, 3 H)	54.6	54.9
OH-8	9.67 (br s, 1 H)[a]	9.78 (br s, 1 H)[a]		
OH-13	9.44 (br s, 1 H)[b]	9.53 (br s, 1 H)[b]		
OH-20	9.30 (br s, 1 H)[c]	9.40 (br s, 1 H)[c]		

[a-c] Protons with variable position

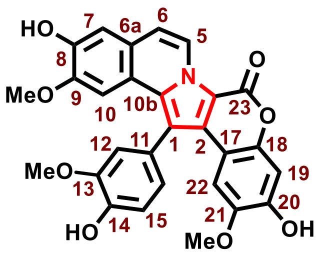
Table S5: ^{1}H and ^{13}C NMR comparison of presently synthesized lamellarin N with the reported data.



lamellarin N

^{1}H NMR (reported)[4]	**^{1}H NMR** (Synthesized)	**^{13}C NMR** (reported)[4]	**^{13}C NMR** (Synthesized)
9.90 (br, s, 2H)	9.98 (br, s, 1H); 9.88 (br s, 1H)	154.2	154.4
9.40 (br, s, 1H)	9.42 (br, s, 1H)[j]	148.4	148.6
9.01 (d, 1H, *J* =7.4 Hz)	9.01 (d, 1H, *J* =7.2 Hz)	148.2	148.4
7.25 (d, 1H, *J* = 8.7 Hz)	7.25 (d, 1H, J = 8.0 Hz)	147.9	148.0
7.22 (d, 1H, *J* = 7.4 Hz)	7.22 (d, 1H, *J* = 7.6 Hz)	147.7	147.9
7.20 (s, 1 H)	7.19 (s, 1 H)	147.6	147.7
7.17 (s, 1 H)	7.17 (s, 1 H)	146.2	146.4
7.05–7.01 (m, 2H)	7.04–7.01 (m, 2H)	144.5	144.6
6.87 (s, 1H)	6.87 (s, 1H)	133.8	133.9
6.76 (s, 1 H)	6.76 (s, 1 H)	128.7	128.8
3.87 (s, 3H)	3.87 (s, 3H)	127.3	127.4
3.40 (s, 3H)	3.40 (s, 3H)	124.6	124.7
3.40 (s, 3H)	3.39 (s, 3H)	122.0	122.2
		121.9	122.1
		118.1	118.3
		117.3	117.5
		113.6	113.7
		112.3	112.5
		111.4	111.6
		110.4	110.6
		108.1	108.3
		106.4	106.5
		105.6	105.7
		105.2	105.3
		103.7	103.8
		56.0	56.2
		55.0	55.1
		54.4	54.6

Table S6: ^{1}H and ^{13}C NMR comparison of presently synthesized lamellarin D with the reported data.



lamellarin D

^{1}H NMR (reported)[5]	**^{1}H NMR** (Synthesized)	**^{13}C NMR** (reported)[5]	**^{13}C NMR** (Synthesized)
9.91 (s, 1H)	9.90 (br s, 2H)	154.3	154.4
9.80 (s, 1H)		148.7	148.7
9.32 (s, 1H)	9.39 (br s, 1H)	148.4	148.5
8.96 (d, 1H, *J* =7.6 Hz)	9.02 (d, 1H, *J* =7.6 Hz)	148.2	148.4
7.17-7.13 (m, 3H)	7.22 (d, 1H, *J* =7.6 Hz); 7.21 (s, 1 H); 7.17 (d, 1H, *J* = 1.6 Hz)	147.8	147.9
7.07 (d, 1H, *J* =8.0 Hz),	7.11 (d, 1H, *J* =8.0 Hz),	146.8	146.8
7.11 (s, 1 H)	7.15 (s, 1 H)	146.3	146.4
6.98 (dd, 1H, *J* = 1.6, 8.0 Hz)	7.03 (dd, 1H, *J* = 1.6, 8.0 Hz)	144.5	144.6
6.69 (s, 1 H)	6.73 (s, 1 H)	134.0	134.1
6.85 (s, 1H)	6.88 (s, 1H)	128.9	129.0
3.37 (s, 3H)	3.39 (s, 3H)	125.5	125.5
3.37 (s, 3H)	3.39 (s, 3H)	124.6	124.7
3.76 (s, 3H)	3.79 (s, 3H)	123.8	123.8
		121.9	122.1
		117.5	117.6
		116.4	116.4
		115.1	115.0
		112.3	112.4
		111.5	111.5
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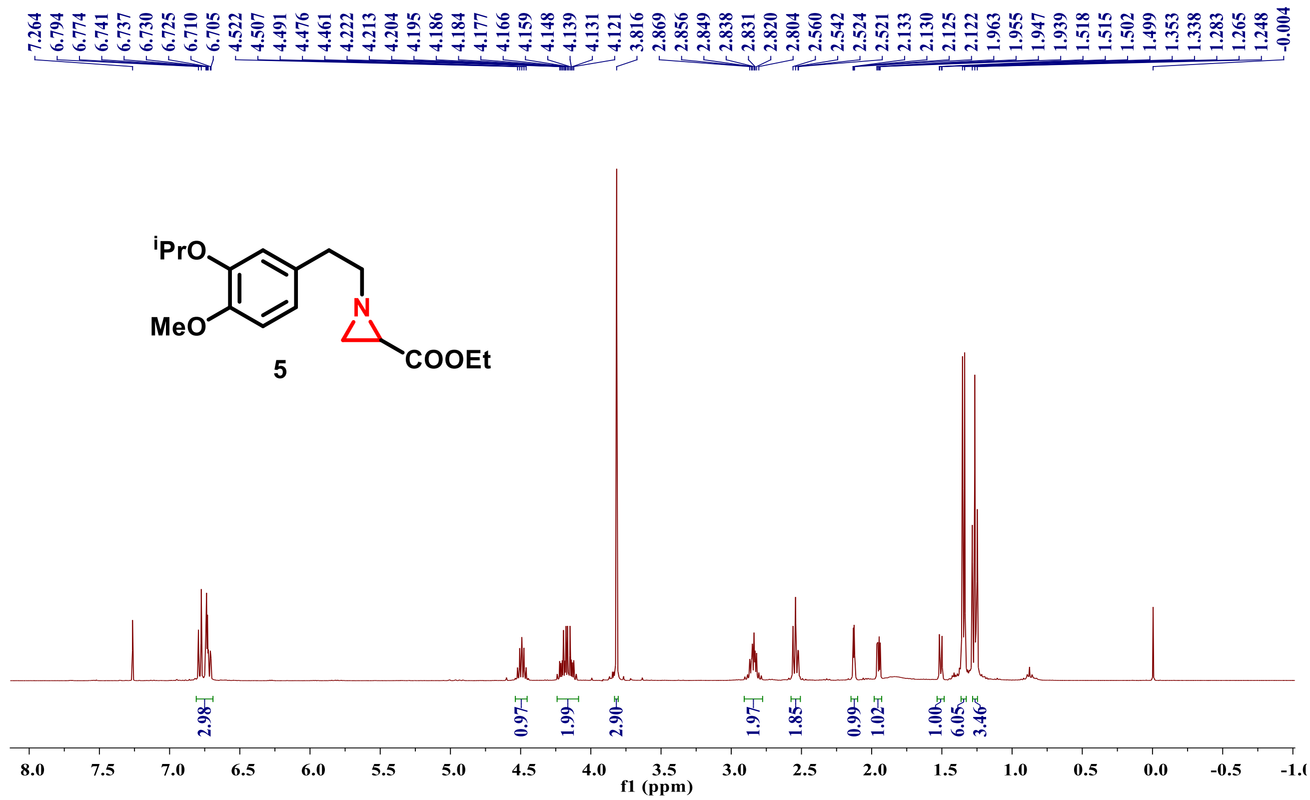
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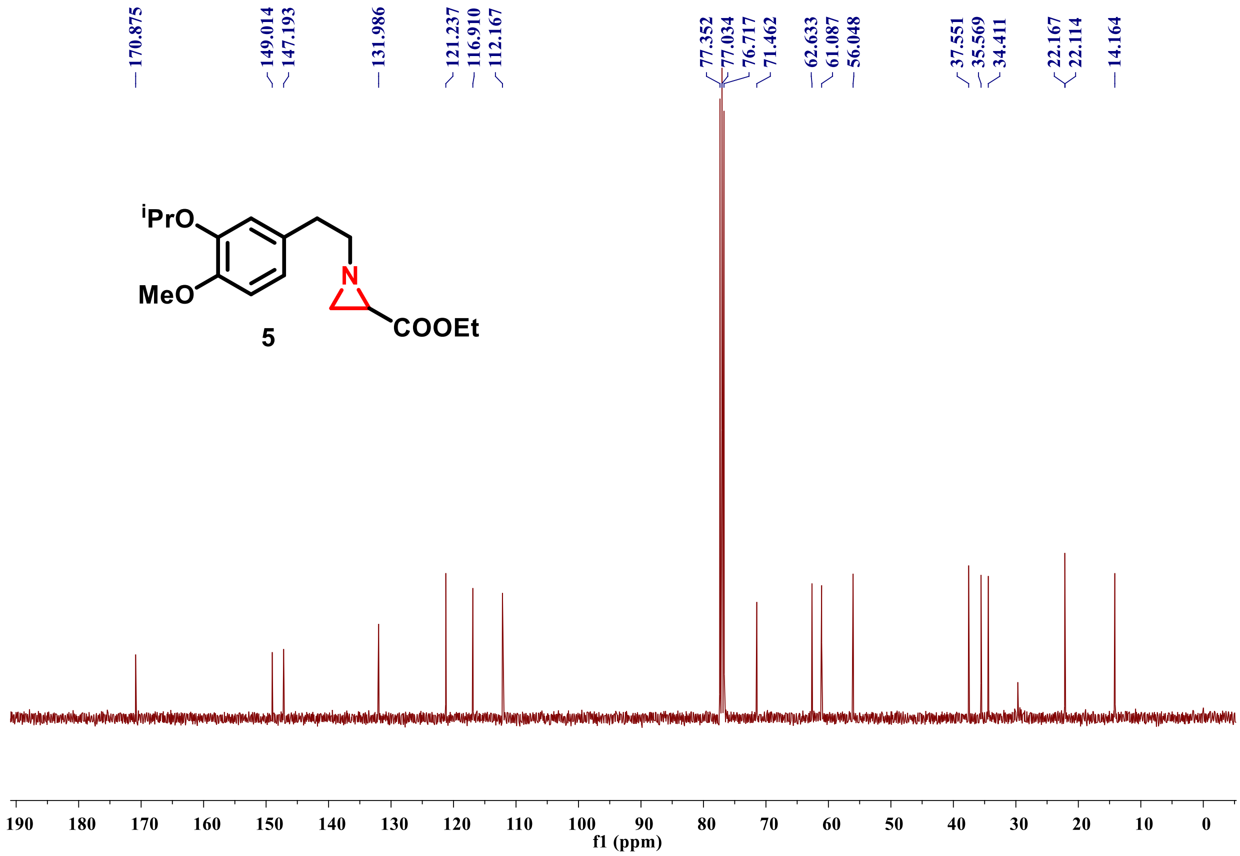
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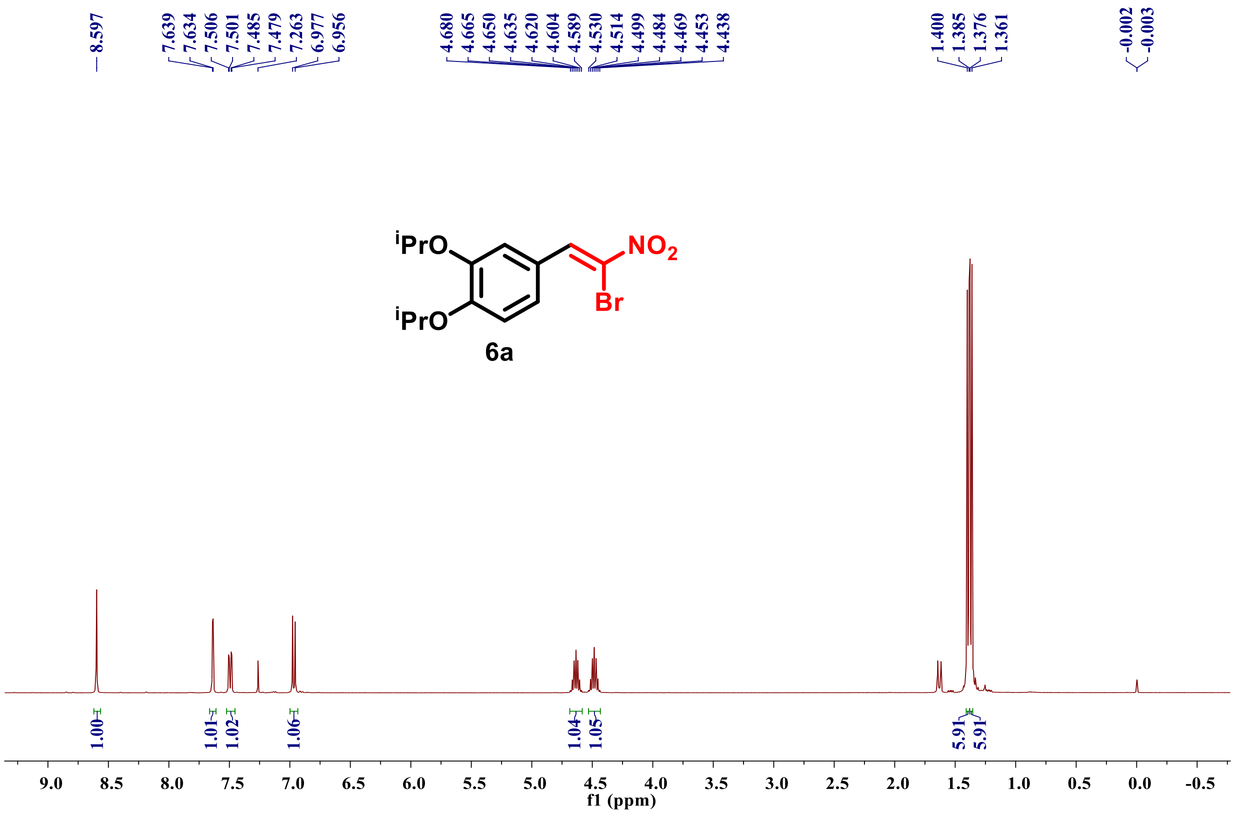
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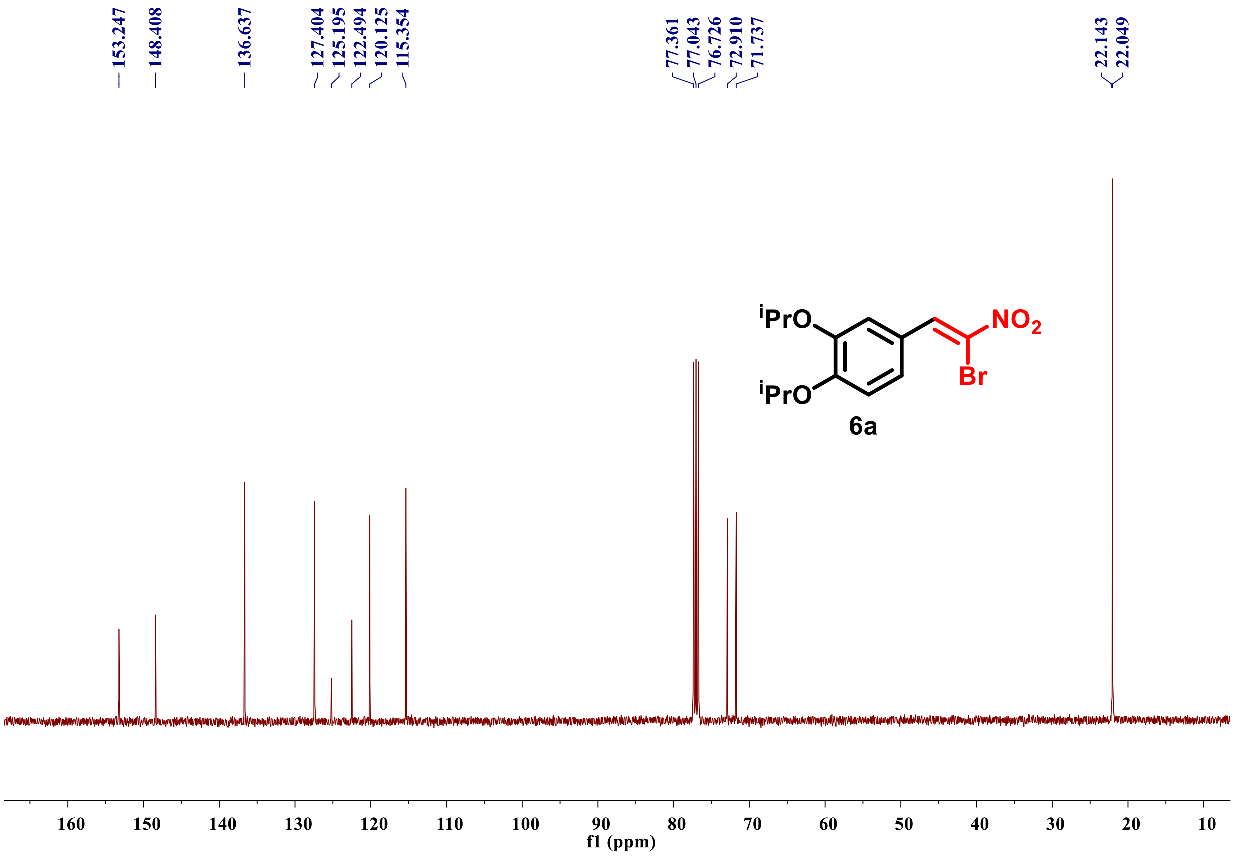
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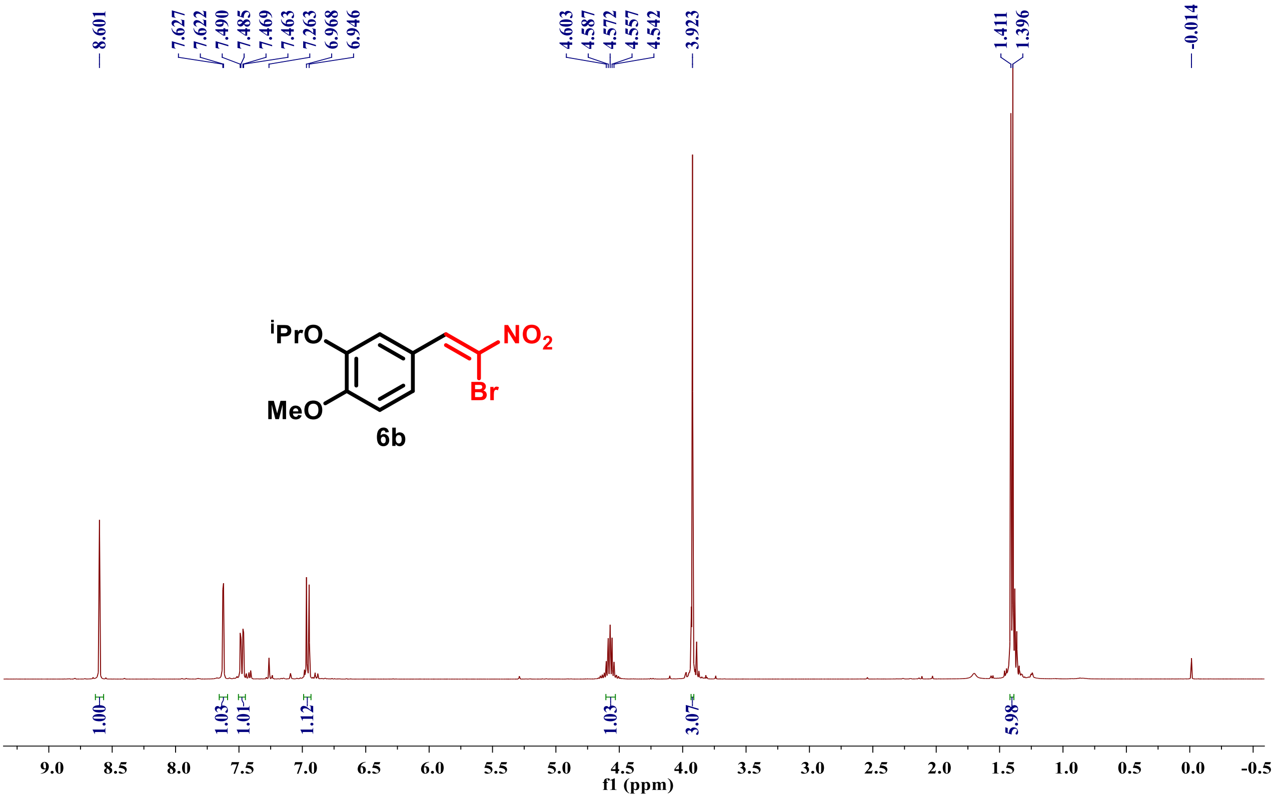
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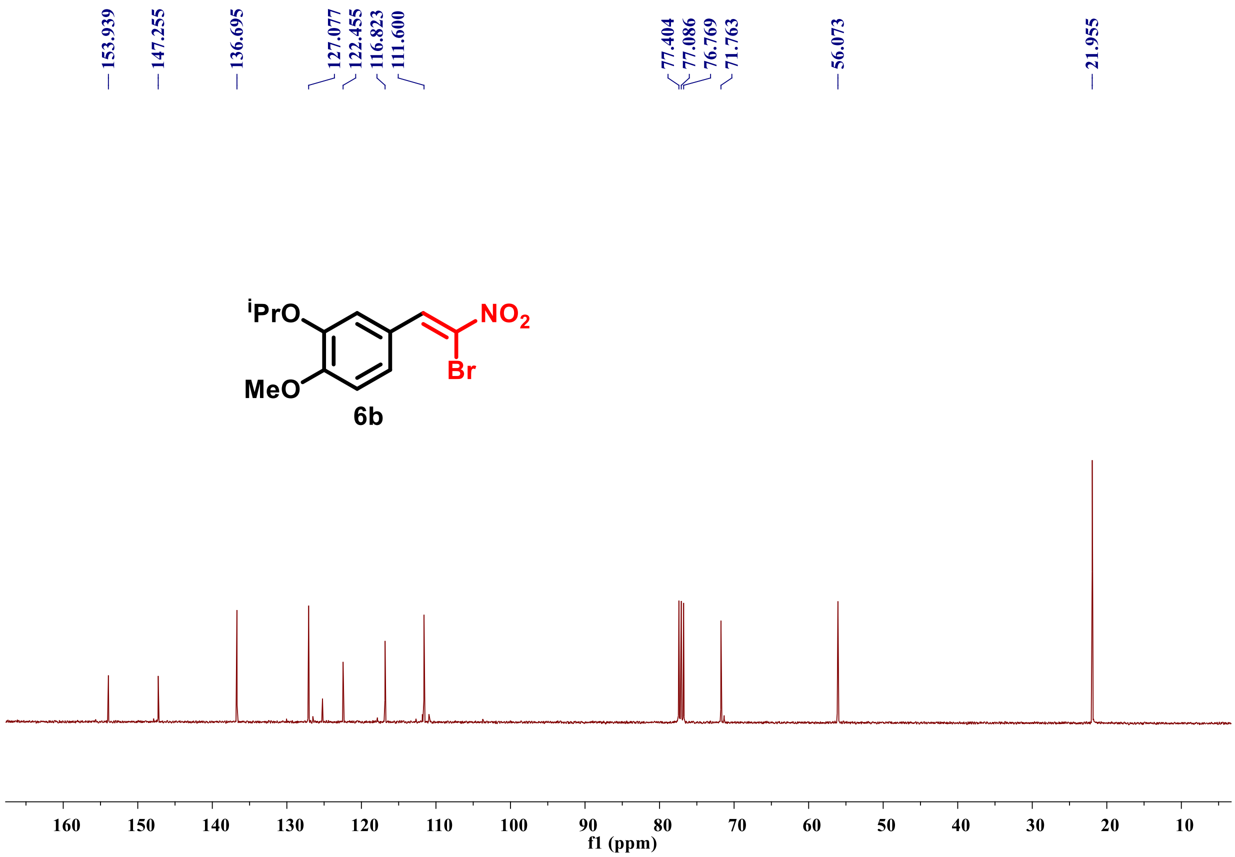
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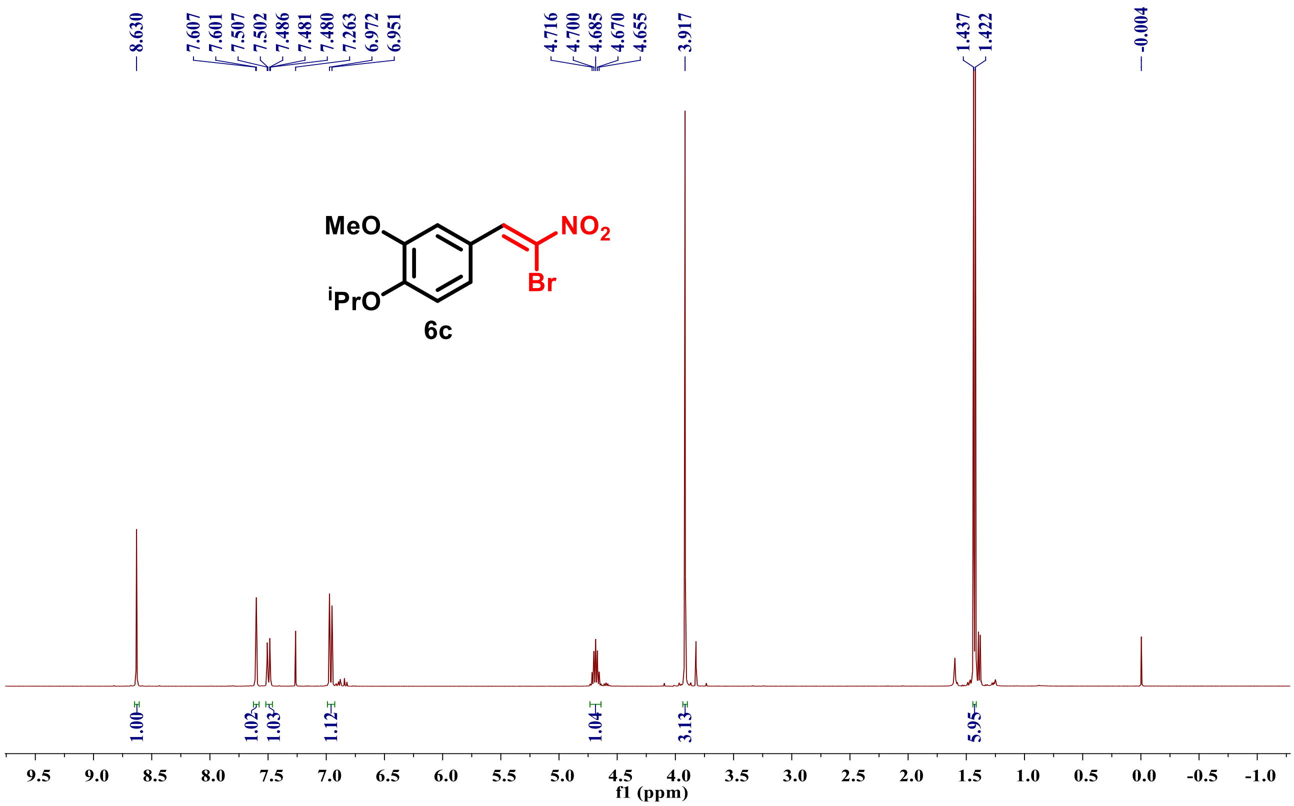
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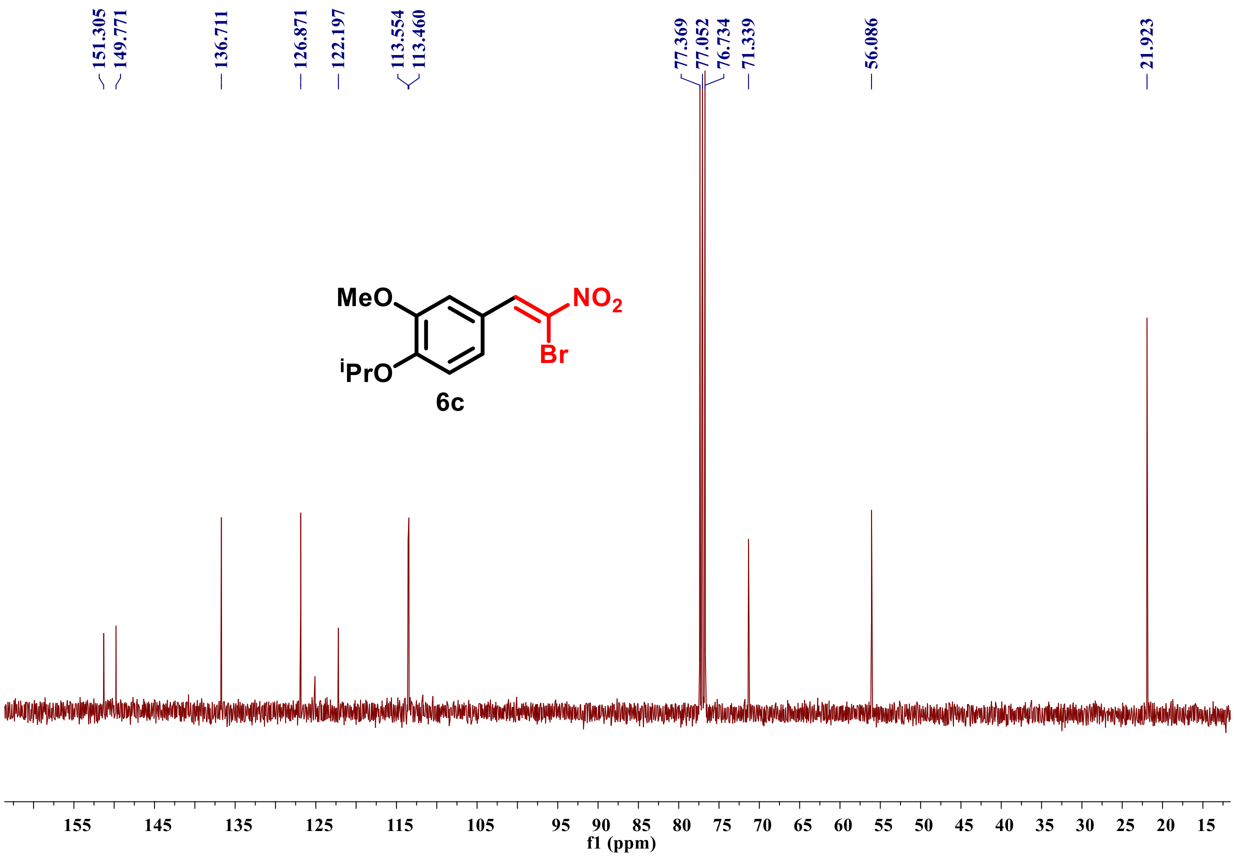
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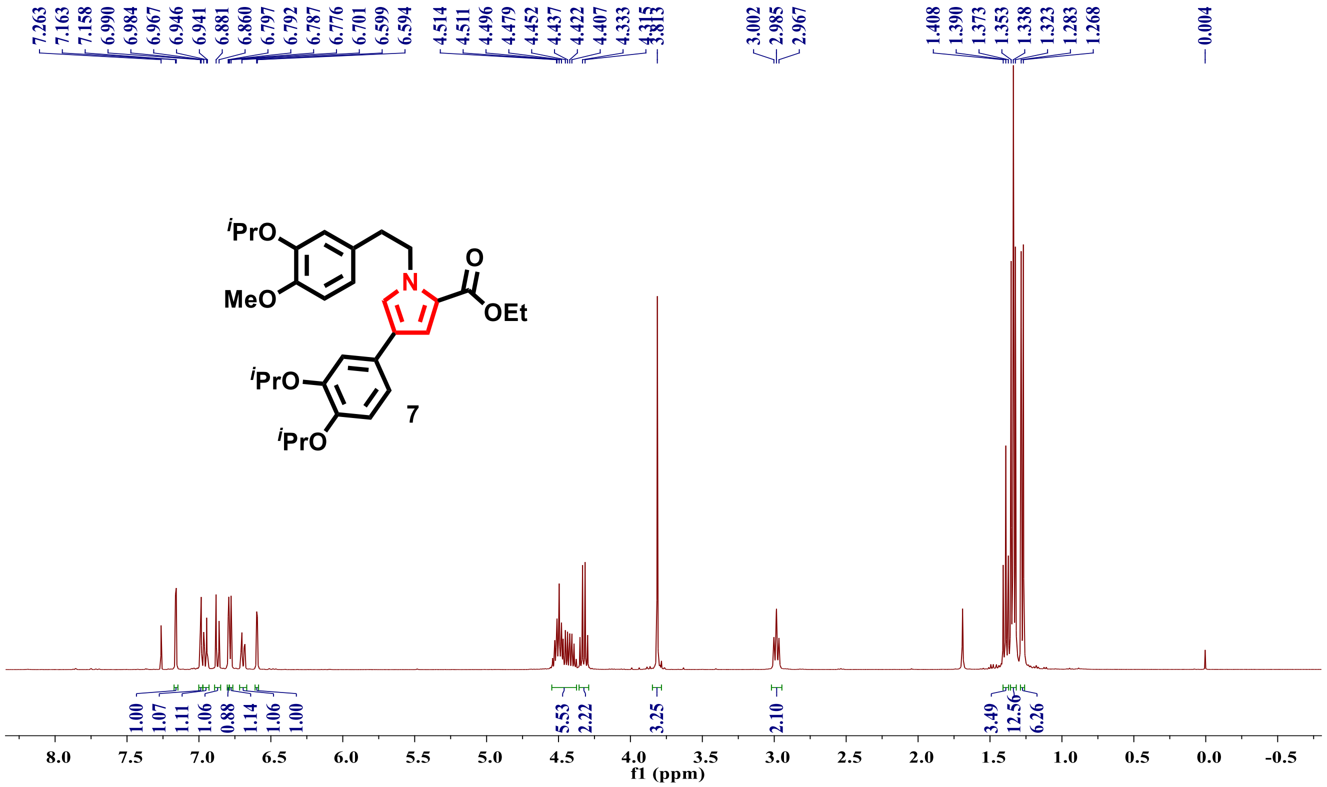
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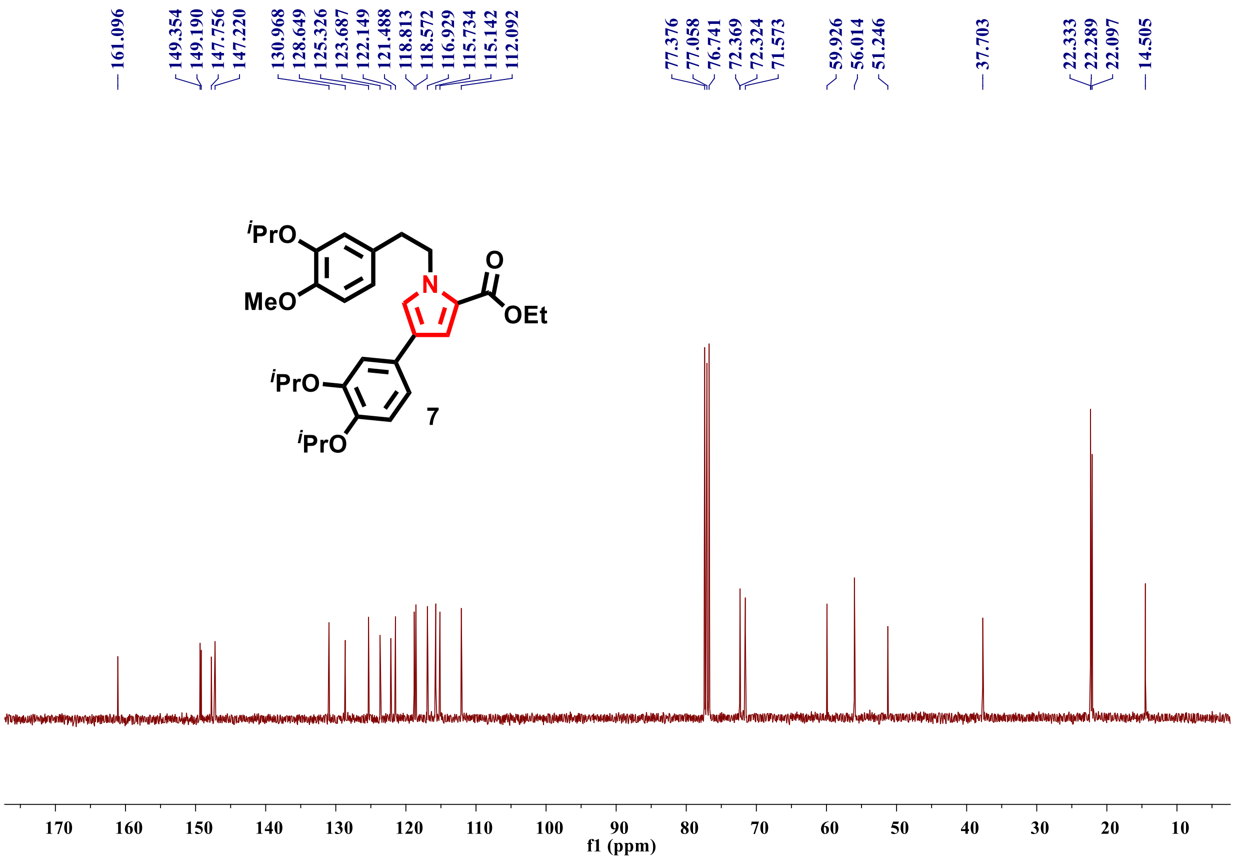
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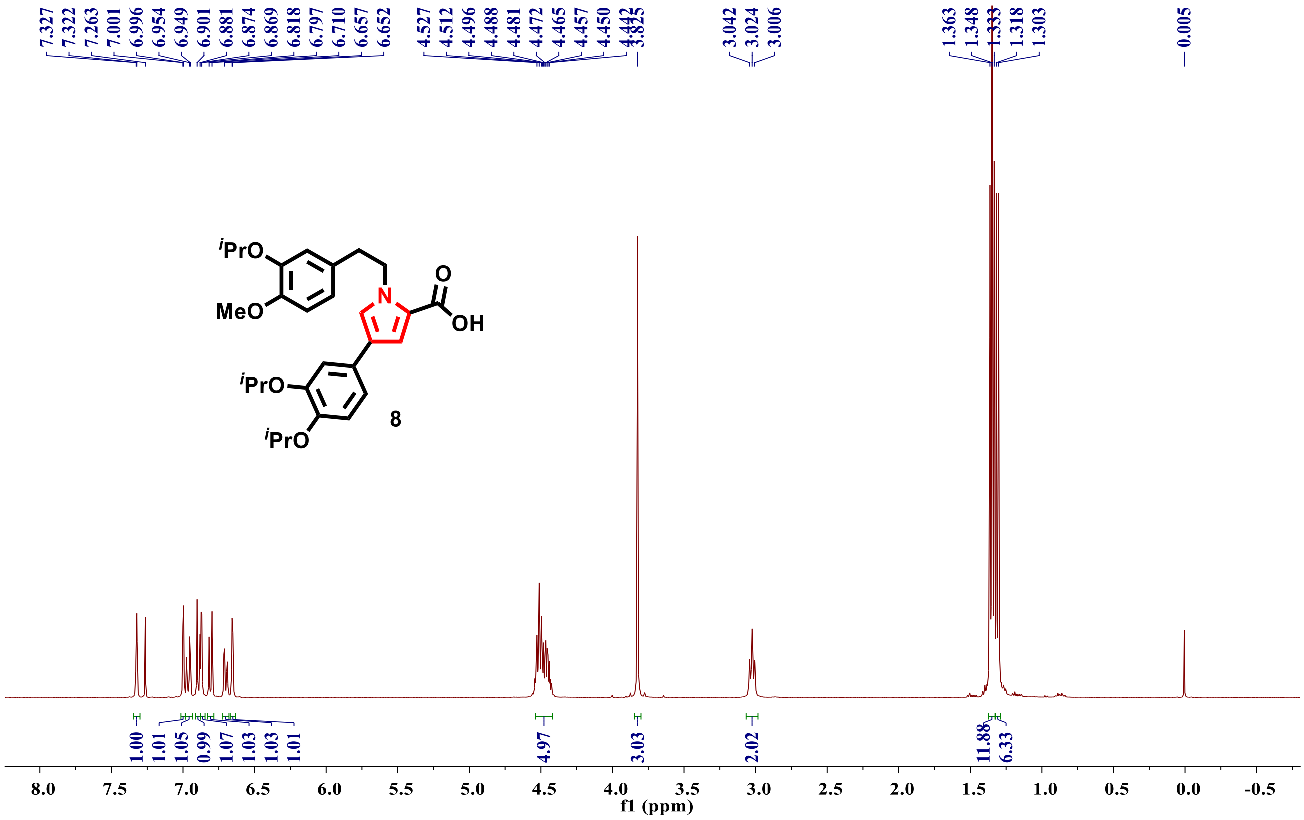
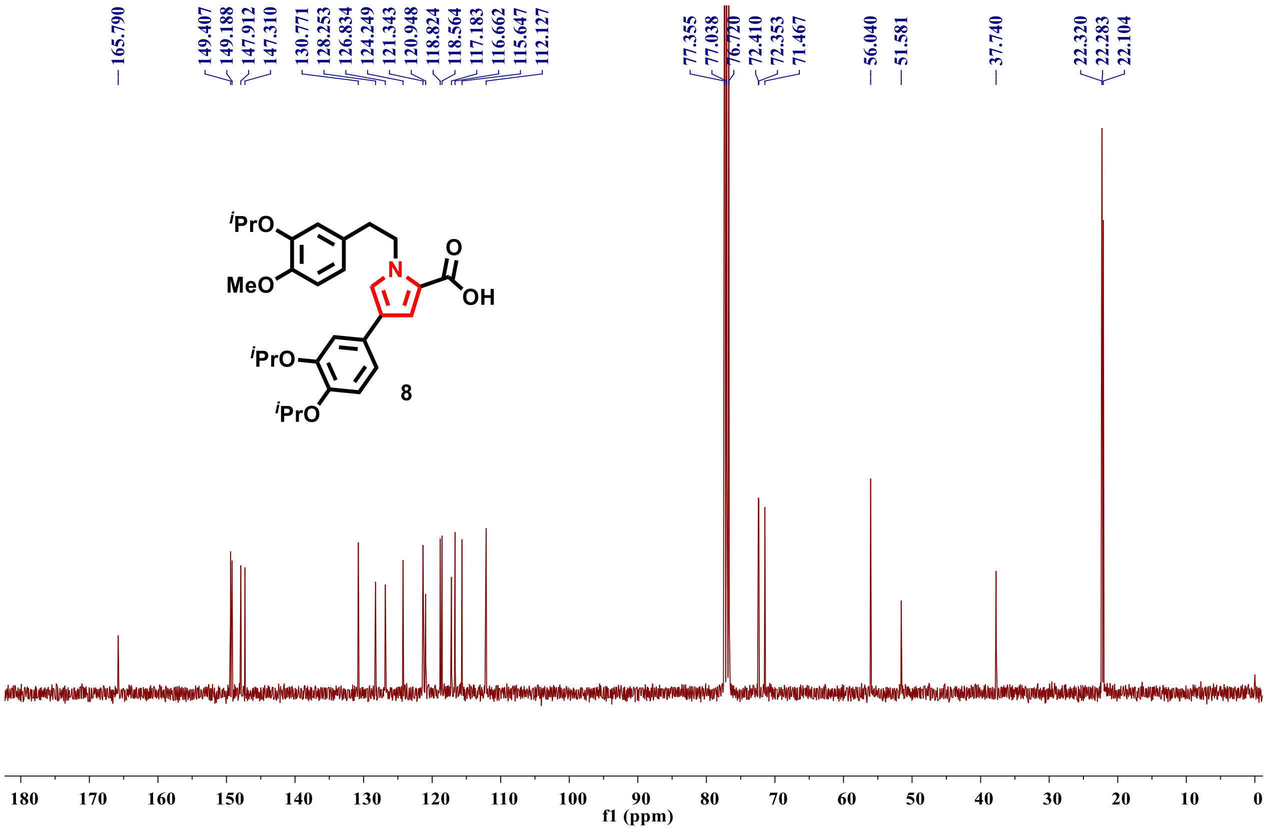
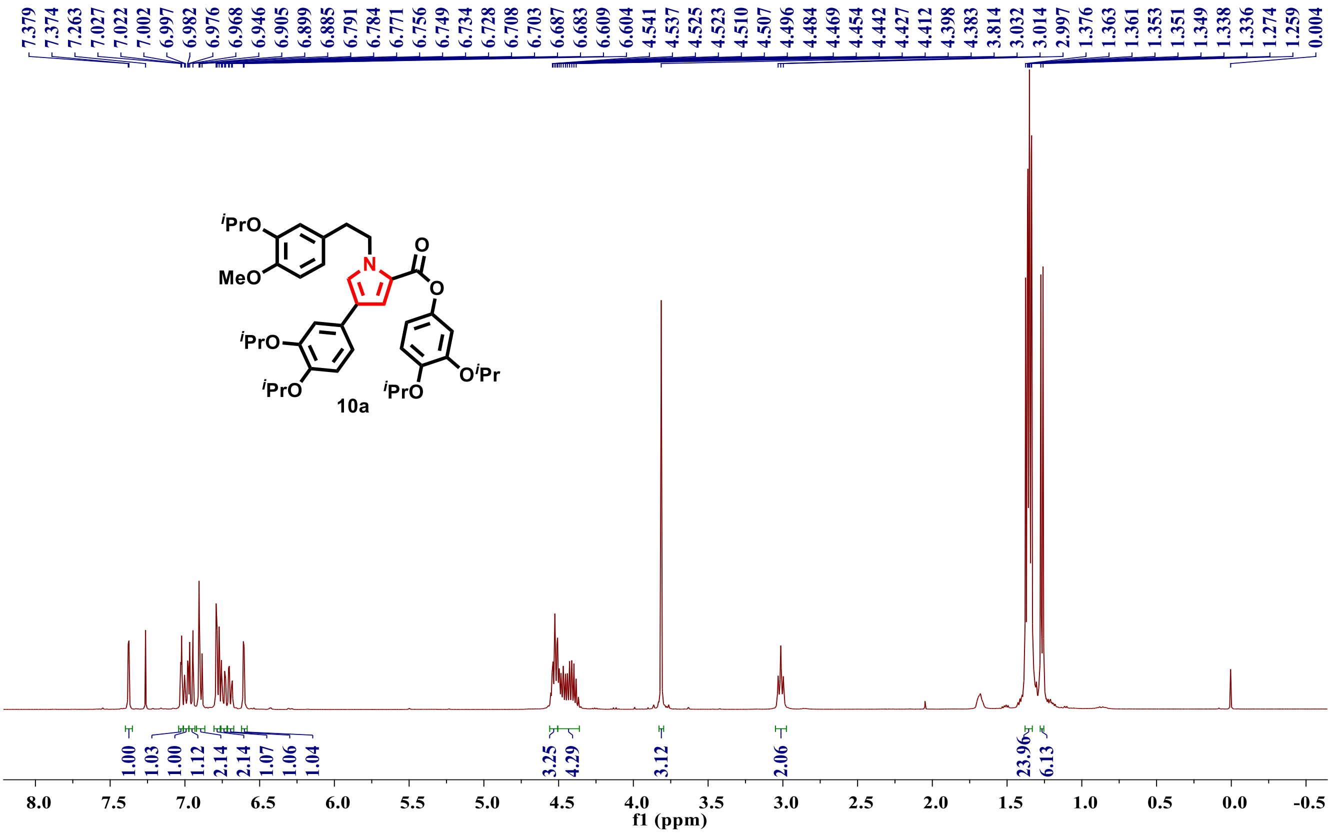
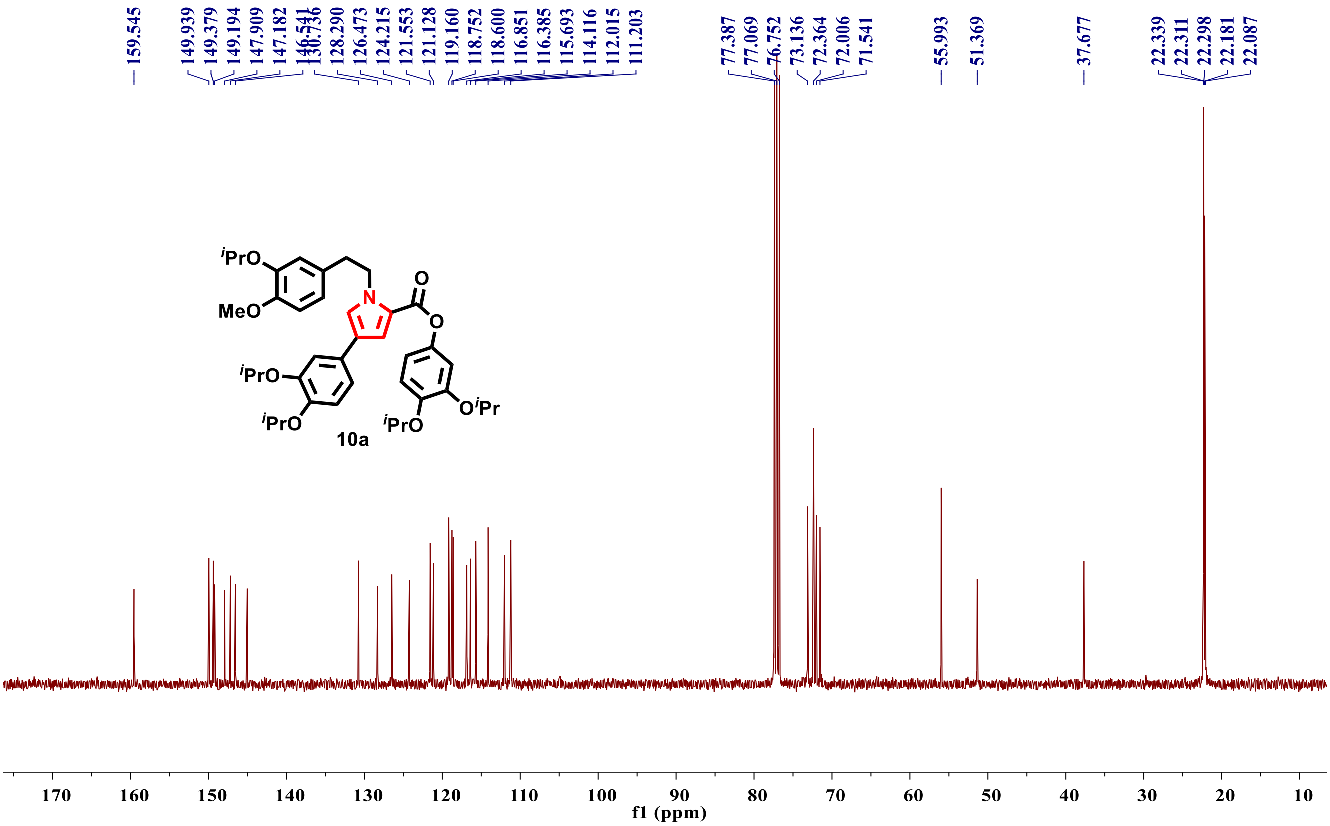
118.813
118.572
116.929
115.734
115.142
112.092
77.376
77.058
76.741
72.369
72.324
71.573
59.926
56.014
51.246
37.703
22.333
22.289
22.097
14.505
^{i}PrO
MeO
N
O
OEt
^{i}PrO
^{i}PrO
7
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10
f1 (ppm)







iPrO
MeO
N
O
O
iPrO
iPrO
OiPr
iPrO
10a
f1 (ppm)



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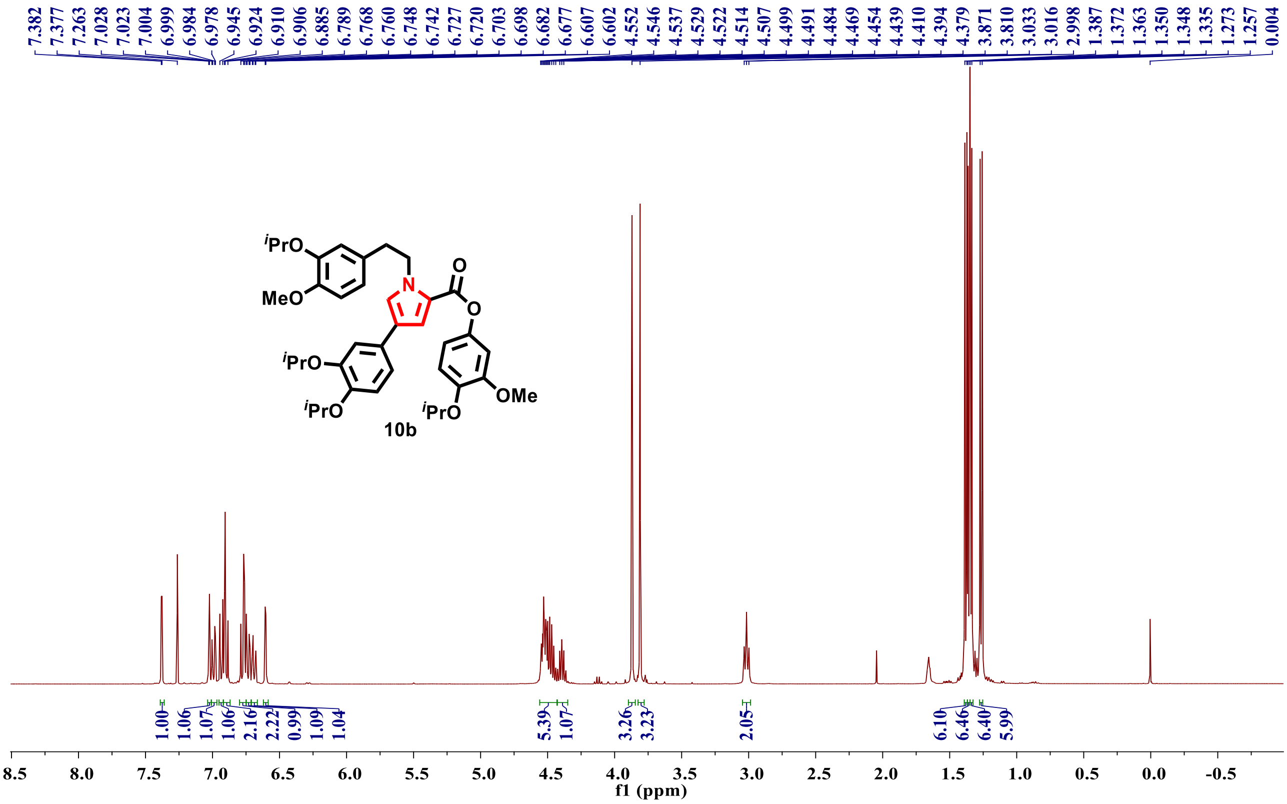
MeO
N
O
O
iPrO
iPrO
OiPr
iPrO
10a
f1 (ppm)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6.906
6.885
6.789
6.768
6.760
6.748
6.742
6.727
6.720
6.703
6.698
6.682
6.677
6.607
6.602
4.552
4.546
4.537
4.529
4.522
4.514
4.507
4.499
4.491
4.484
4.469
4.454
4.439
4.410
4.394
4.379
3.871
3.810
3.033
3.016
2.998
1.387
1.372
1.363
1.350
1.348
1.335
1.273
1.257
0.004
iPrO
MeO
N
O
O
iPrO
iPrO
iPrO
OMe
10b
1.00
1.06
1.07
1.06
2.16
2.22
0.99
1.09
1.04
5.39
1.07
3.26
3.23
2.05
6.10
6.46
6.40
5.99
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
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3.0
2.5
2.0
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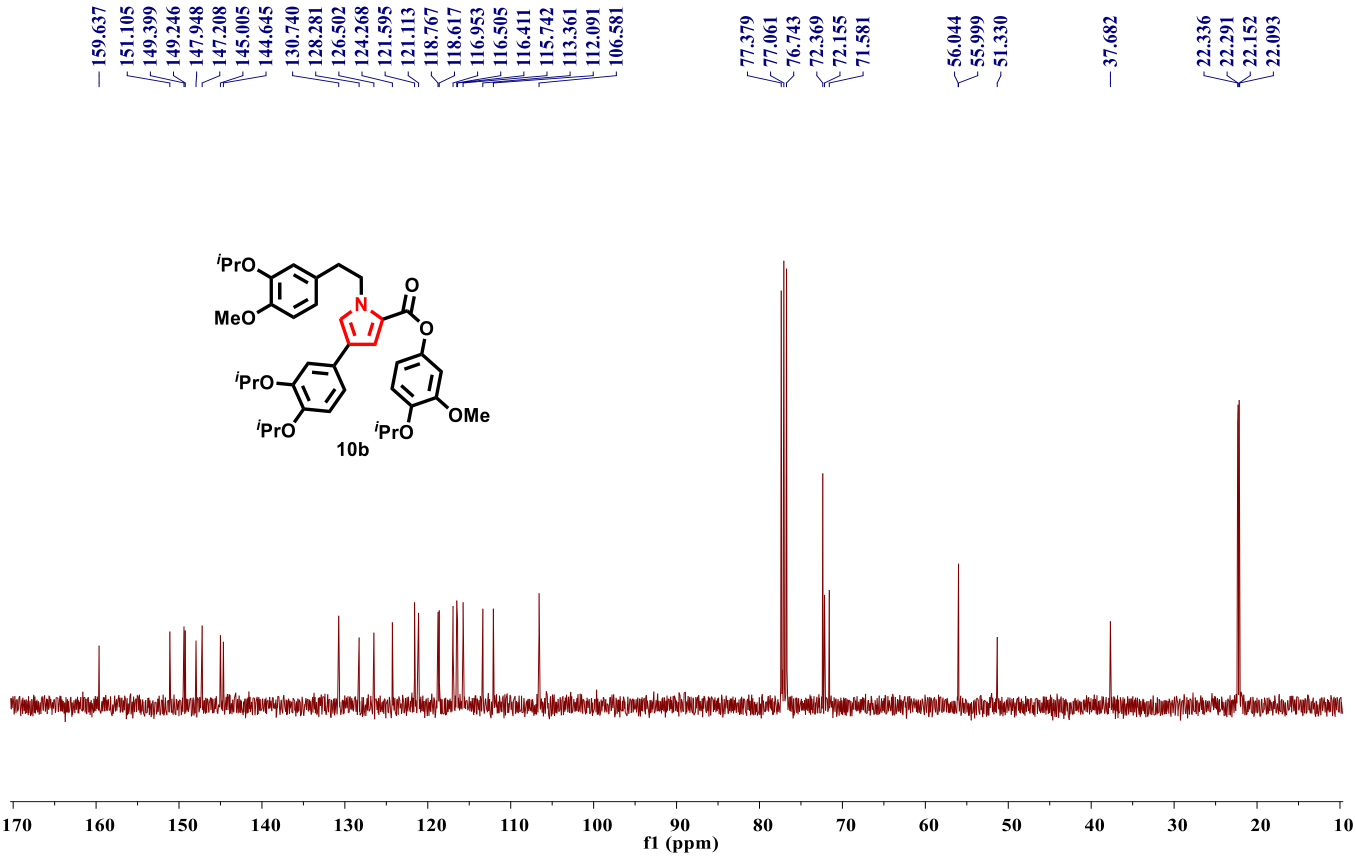
0.5
0.0
-0.5
f1 (ppm)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144.645
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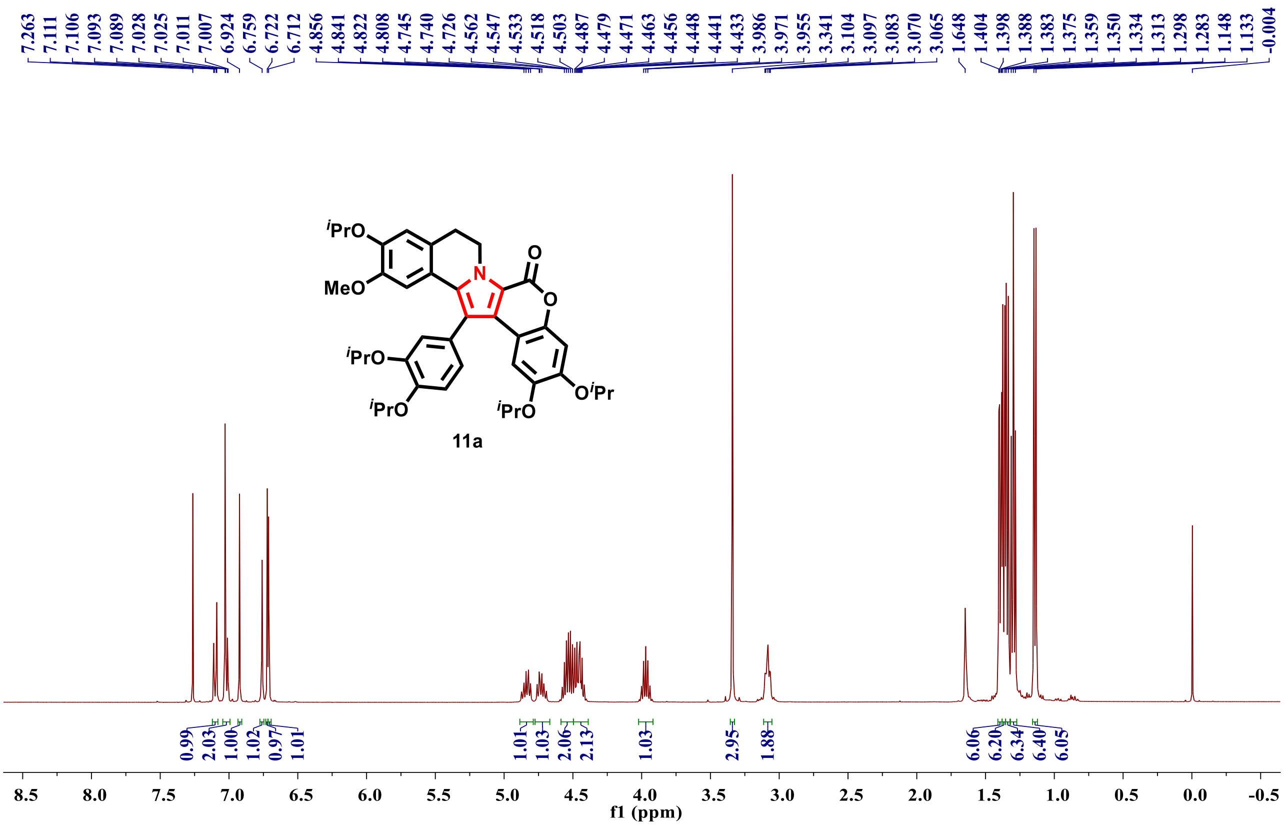
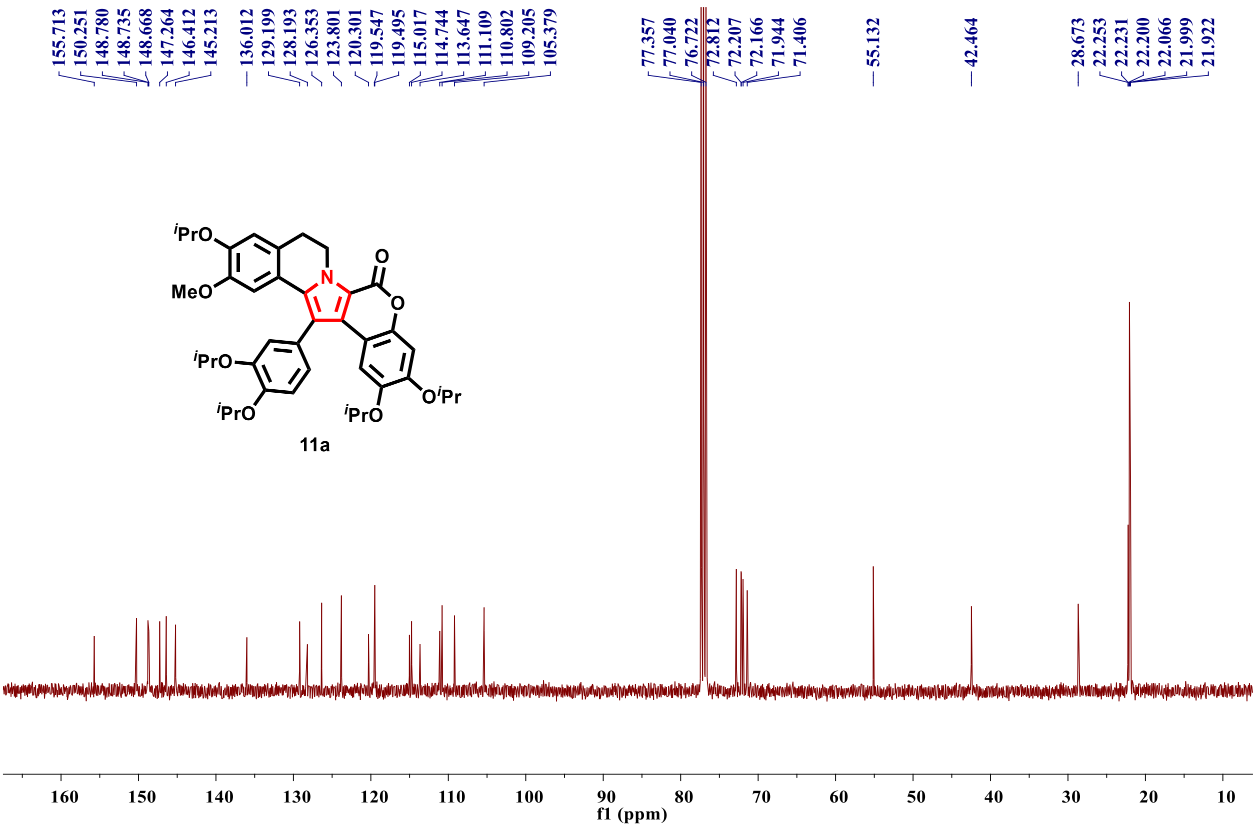
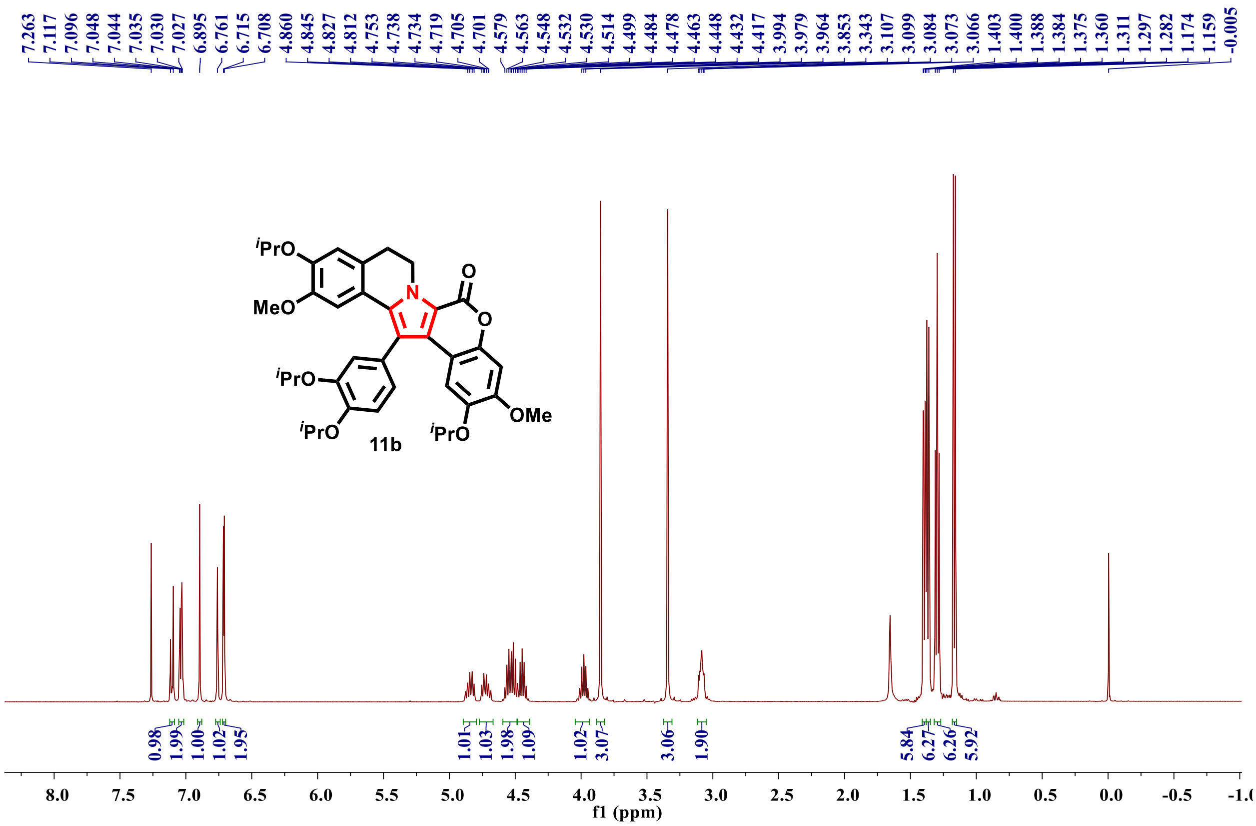
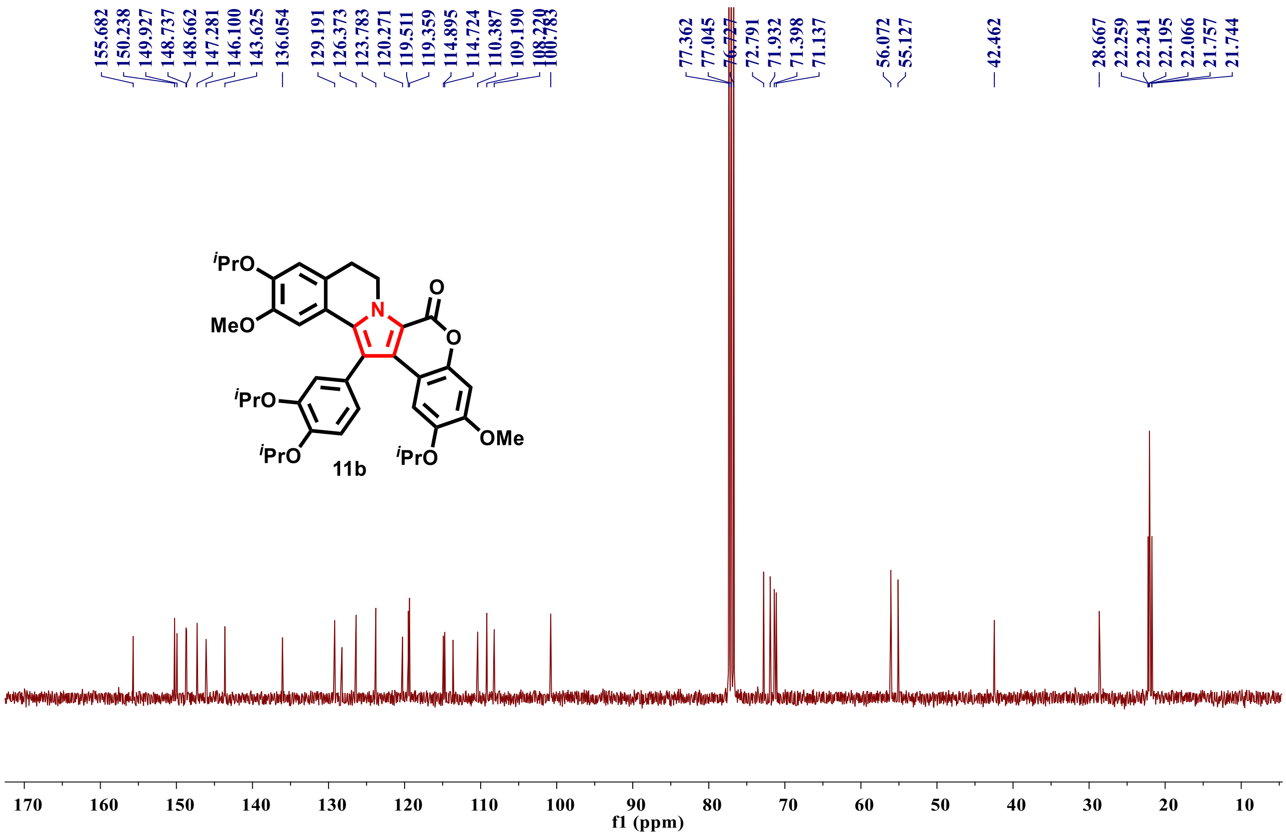
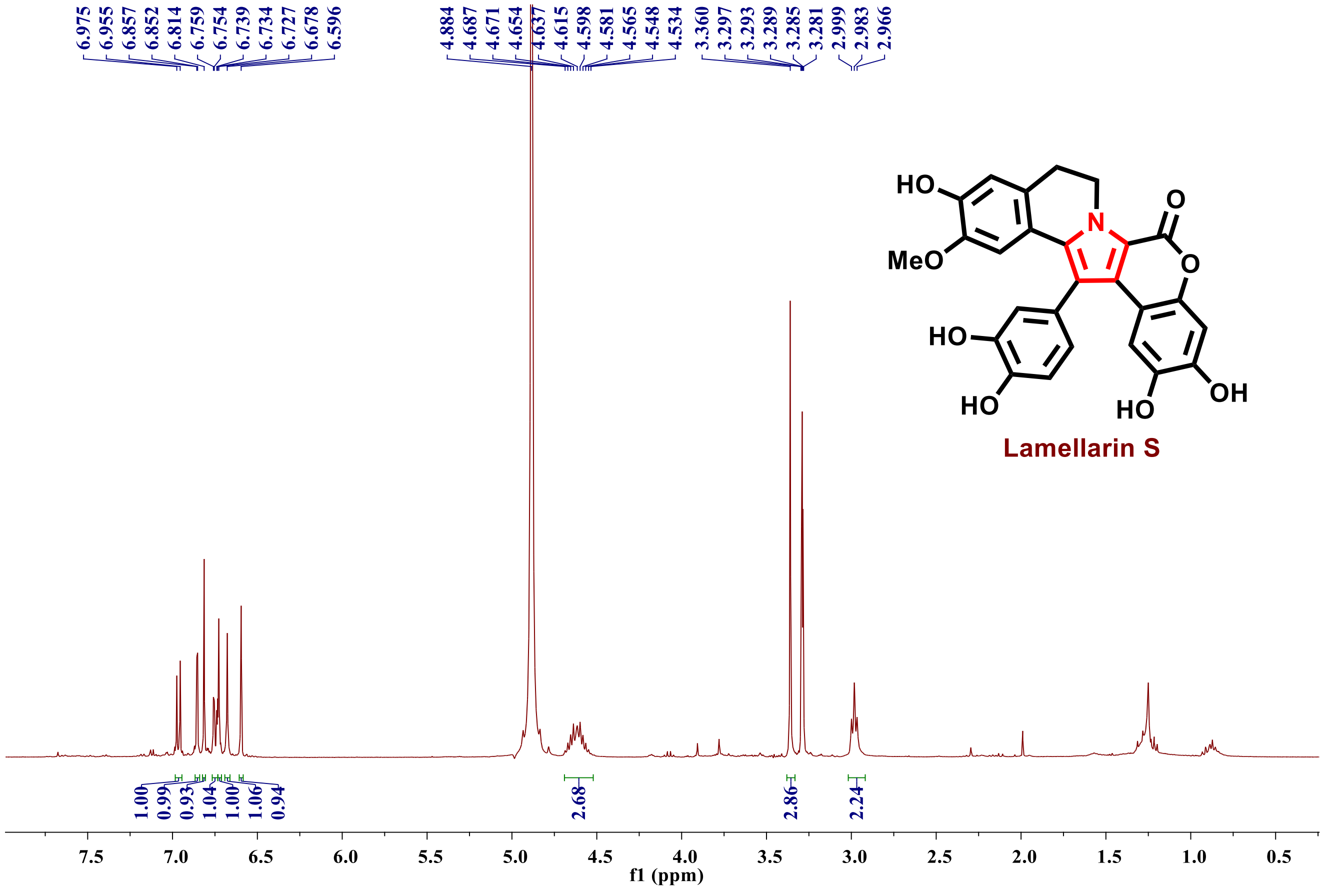
128.281
126.502
124.268
121.595
121.113
118.767
118.617
116.953
116.505
116.411
115.742
113.361
112.091
106.581
77.379
77.061
76.743
72.369
72.155
71.581
56.044
55.999
51.330
37.682
22.336
22.291
22.152
22.093
iPrO
MeO
N
O
O
iPrO
iPrO
iPrO
OMe
10b
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
f1 (ppm)

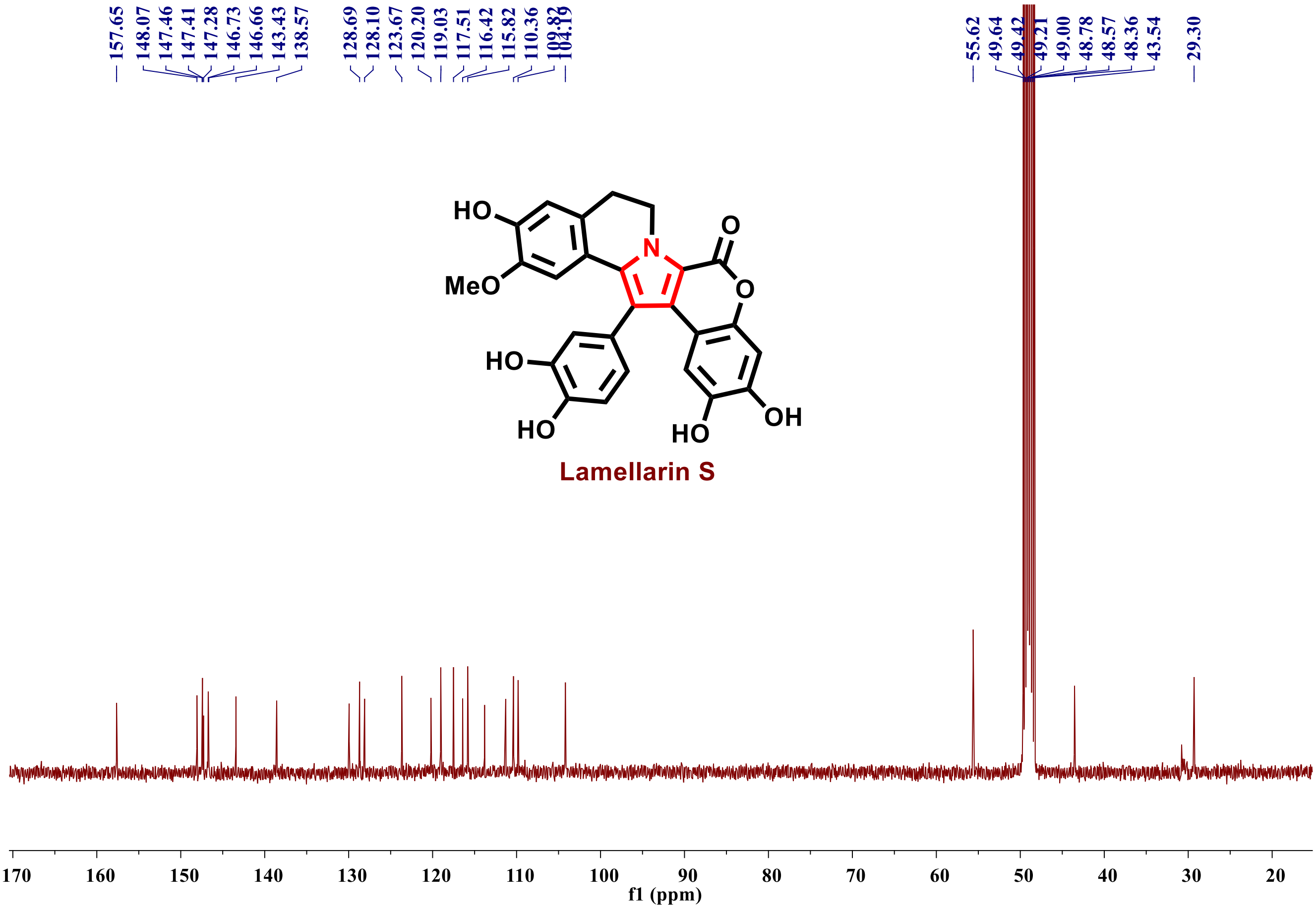


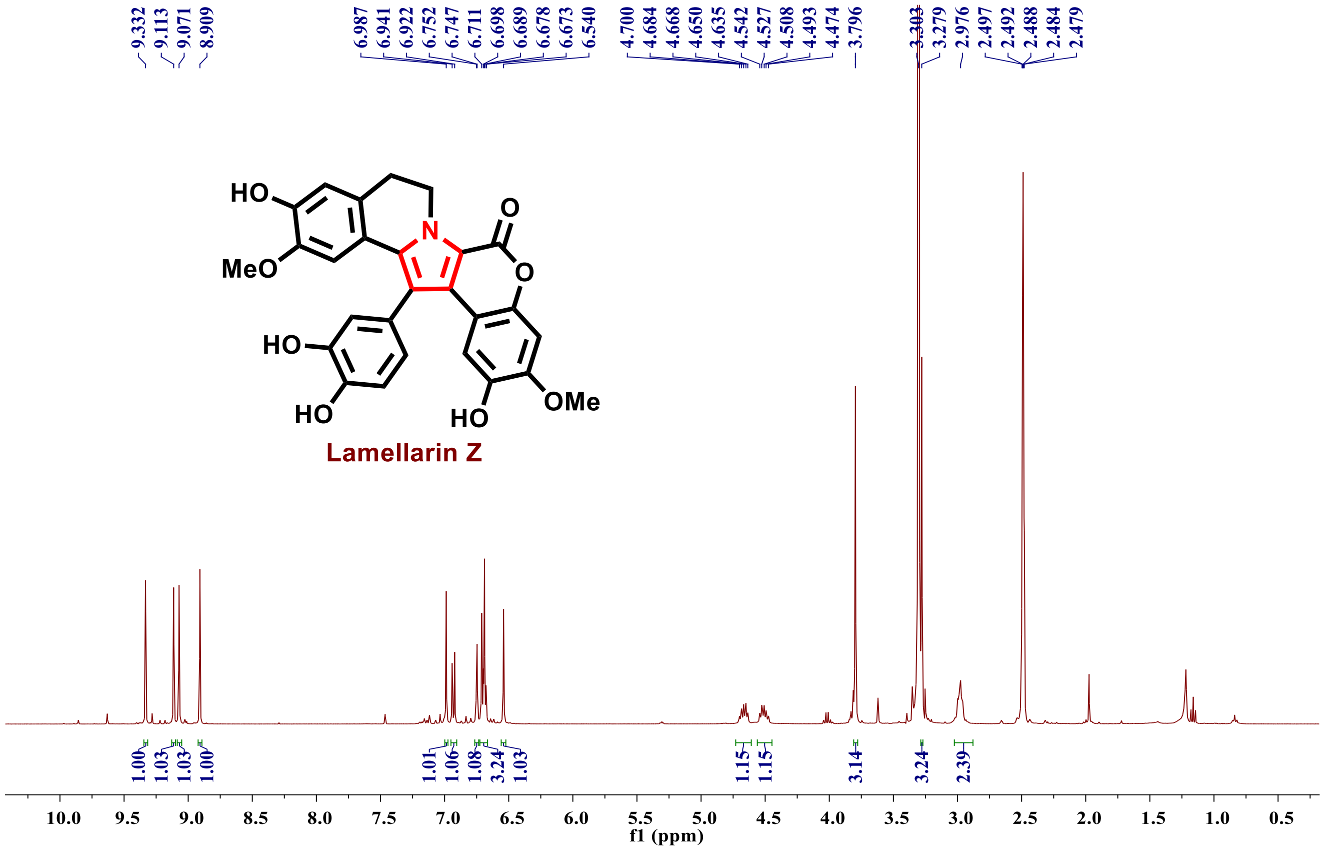







Lamellarin S
f1 (ppm)


Lamellarin S
f1 (ppm)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6.941
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6.752
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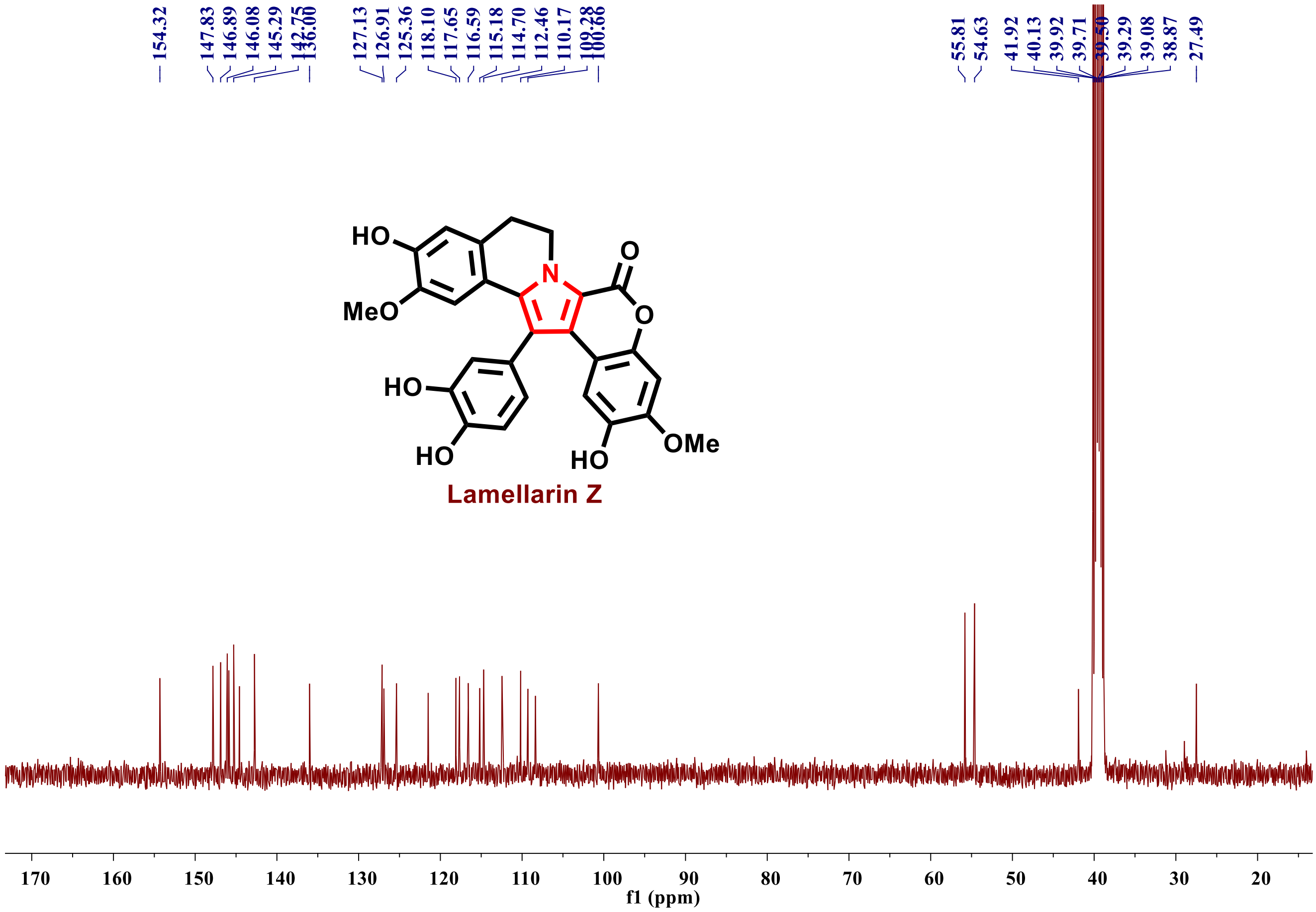
6.711
6.698
6.689
6.678
6.673
6.540
4.700
4.684
4.668
4.650
4.635
4.542
4.527
4.508
4.493
4.474
3.796
3.303
3.279
2.976
2.497
2.492
2.488
2.484
2.479
HO
MeO
N
O
O
HO
HO
HO
OMe
Lamellarin Z
1.00
1.03
1.03
1.00
1.01
1.06
1.08
3.24
1.03
1.15
1.15
3.14
3.24
2.39
f1 (ppm)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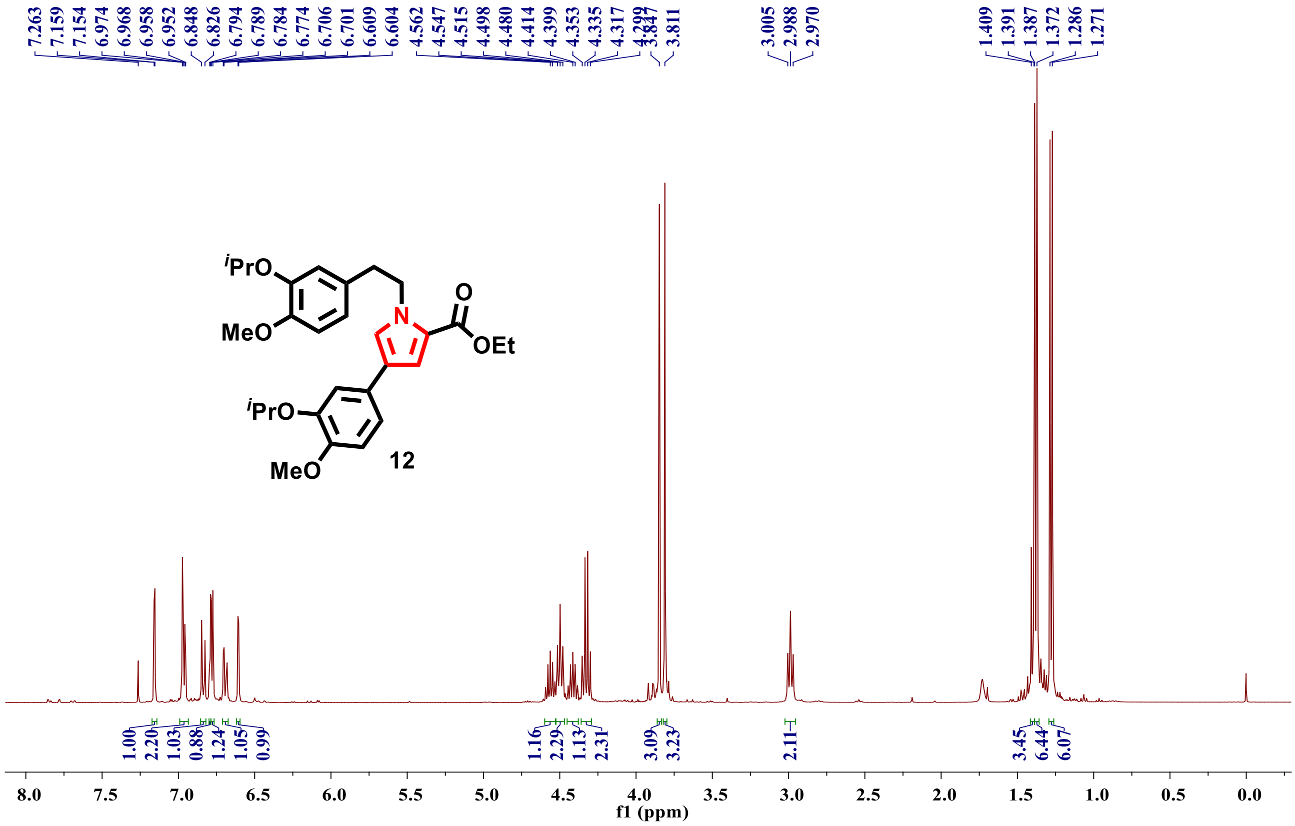
147.83
146.89
146.08
145.29
142.75
136.00
127.13
126.91
125.36
118.10
117.65
116.59
115.18
114.70
112.46
110.17
109.28
100.66
55.81
54.63
41.92
40.13
39.92
39.71
39.50
39.29
39.08
38.87
27.49
HO
MeO
N
O
O
HO
HO
HO
OMe
Lamellarin Z
f1 (ppm)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6.848
6.826
6.794
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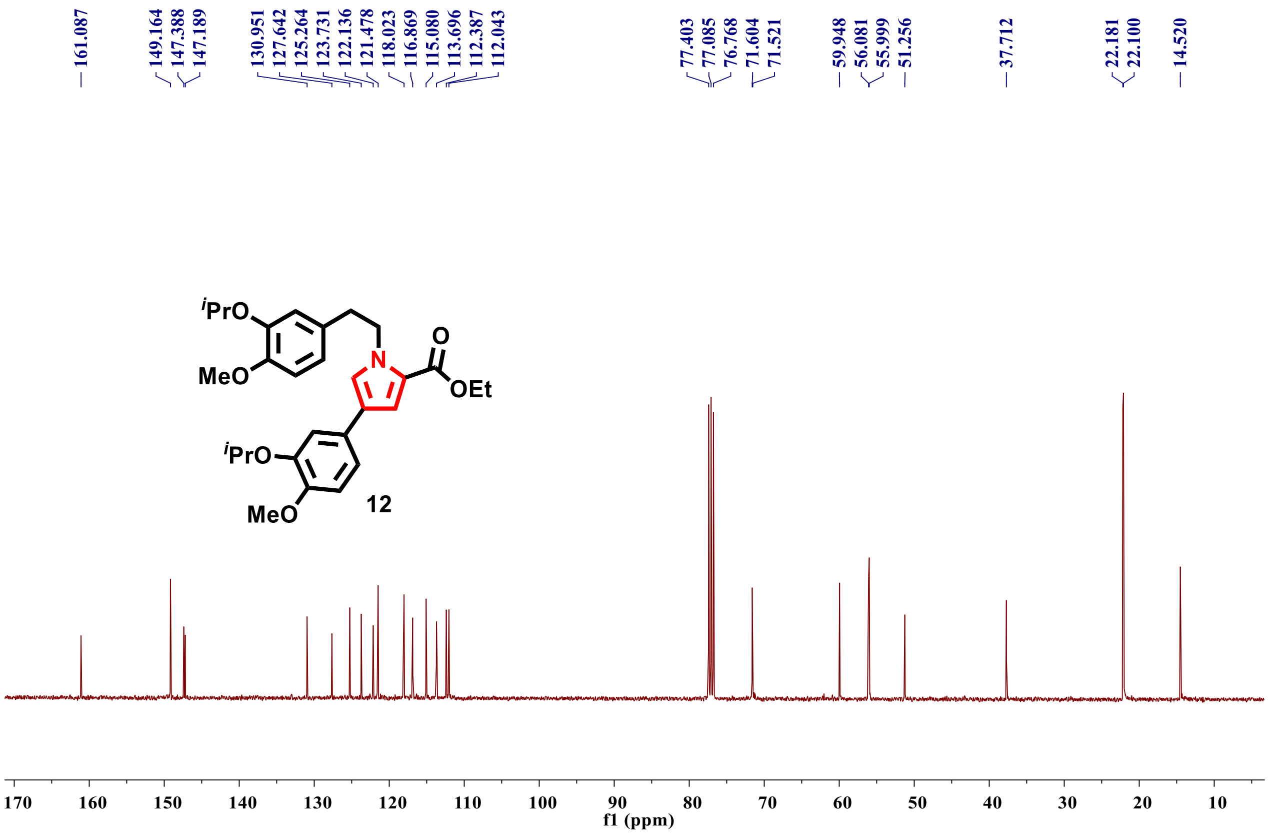
6.784
6.774
6.706
6.701
6.609
6.604
4.562
4.547
4.515
4.498
4.480
4.414
4.399
4.353
4.335
4.317
4.299
3.847
3.811
3.005
2.988
2.970
1.409
1.391
1.387
1.372
1.286
1.271
^{i}PrO
MeO
N
O
OEt
^{i}PrO
MeO
12
1.00
2.20
1.03
0.88
1.24
1.05
0.99
1.16
2.29
1.13
2.31
3.09
3.23
2.11
3.45
6.44
6.07
8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0
f1 (ppm)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123.731
122.136
121.478
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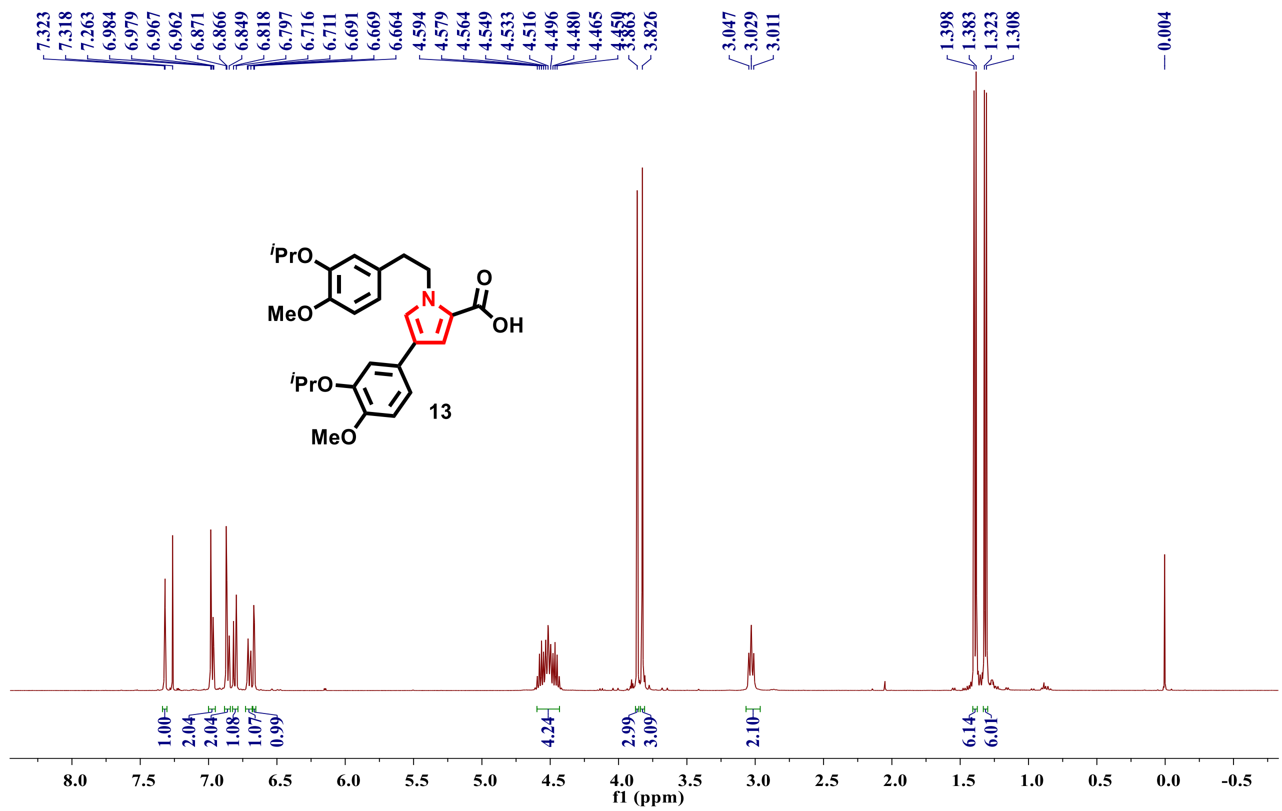
116.869
115.080
113.696
112.387
112.043
77.403
77.085
76.768
71.604
71.521
59.948
56.081
55.999
51.256
37.712
22.181
22.100
14.520
^{i}PrO
MeO
N
O
OEt
^{i}PrO
MeO
12
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10
f1 (ppm)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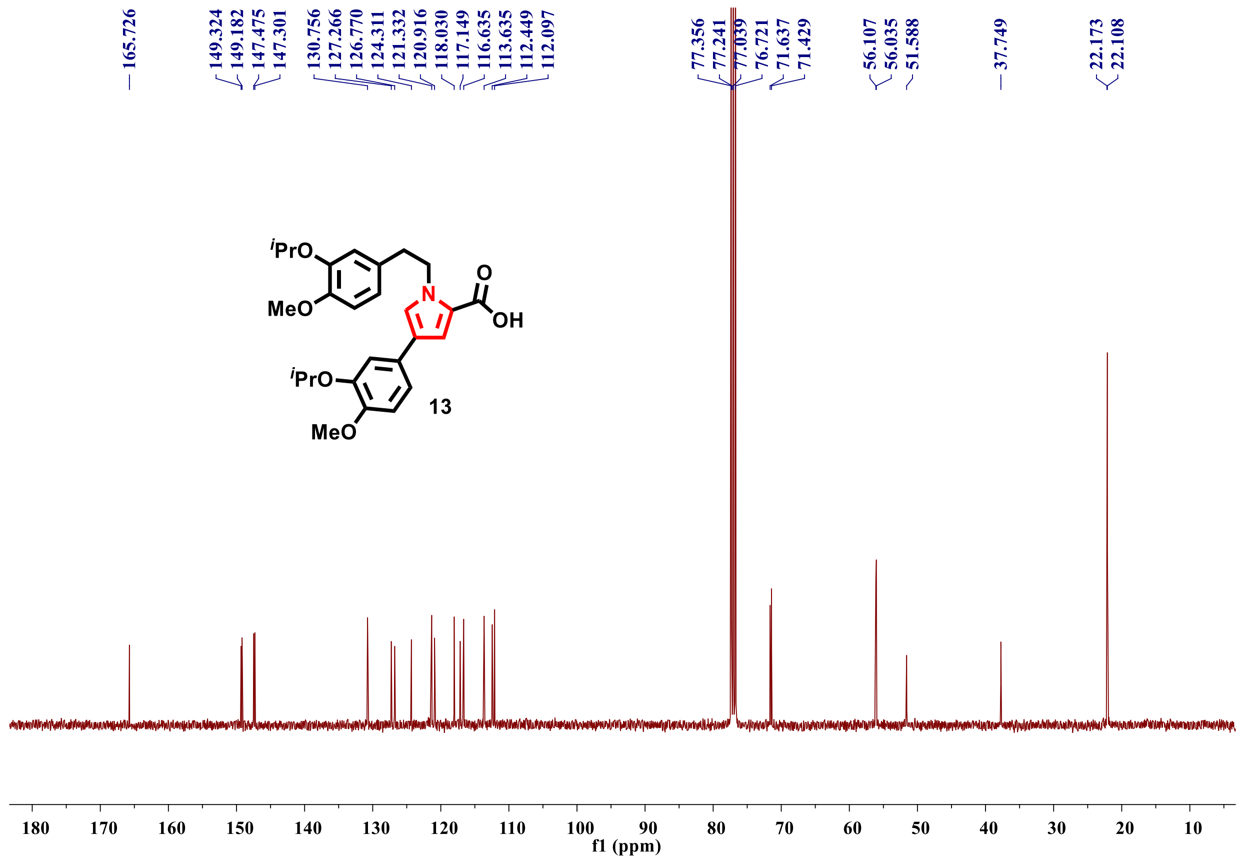
6.797
6.716
6.711
6.691
6.669
6.664
4.594
4.579
4.564
4.549
4.533
4.516
4.496
4.480
4.465
4.450
3.863
3.826
3.047
3.029
3.011
1.398
1.383
1.323
1.308
0.004
^{i}PrO
MeO
N
O
OH
^{i}PrO
MeO
13
1.00
2.04
2.04
1.08
1.07
0.99
4.24
2.99
3.09
2.10
6.14
6.01
f1 (ppm)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126.770
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121.332
120.916
118.030
117.149
116.635
113.635
112.449
112.097
77.356
77.241
77.039
76.721
71.637
71.429
56.107
56.035
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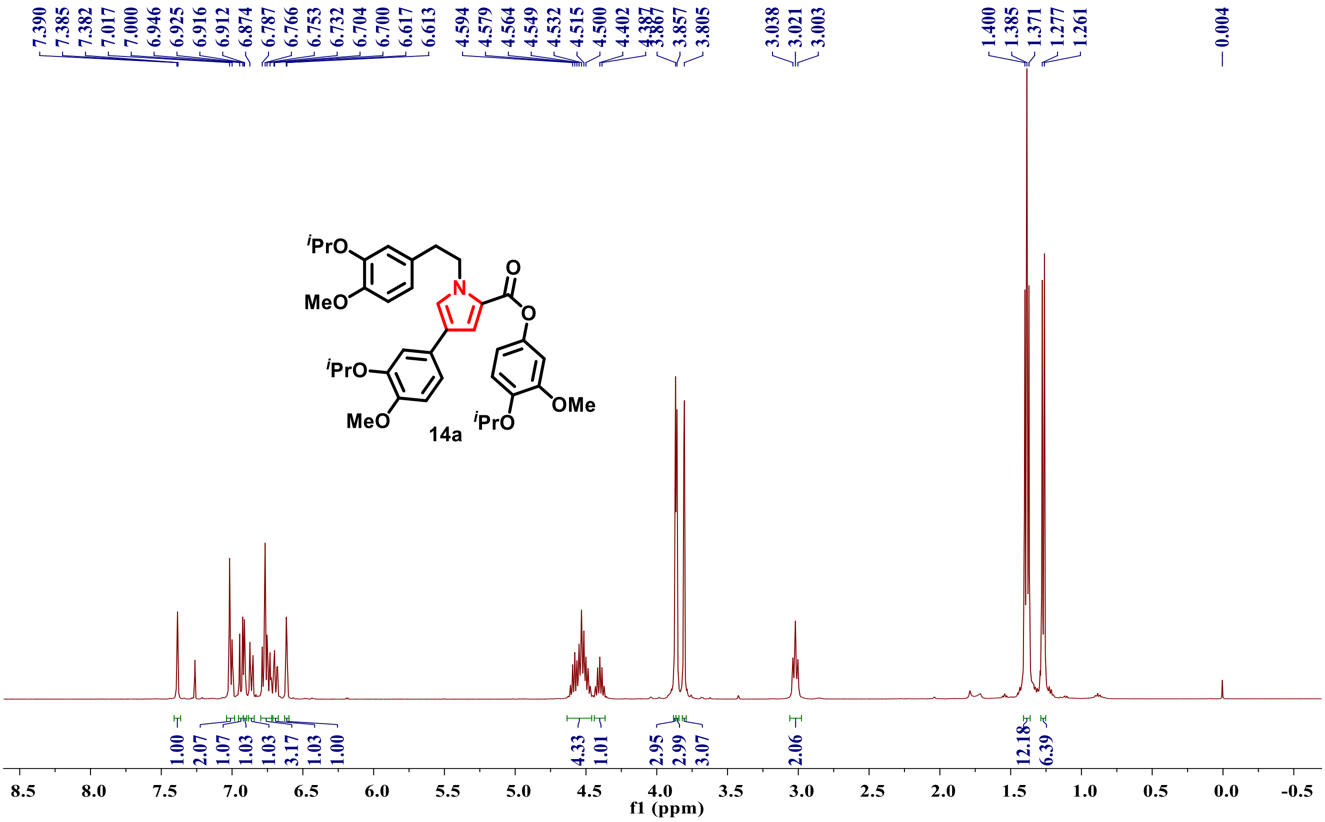
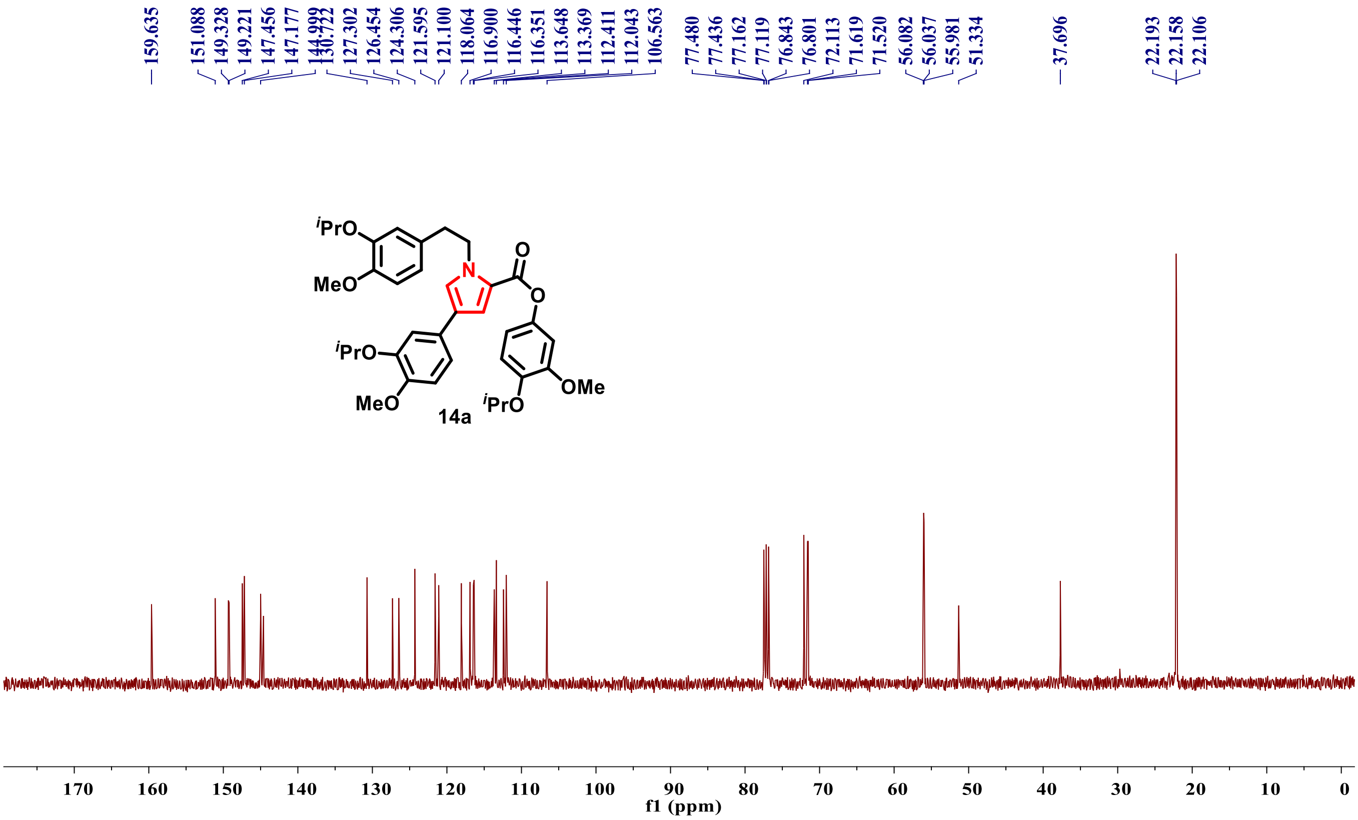
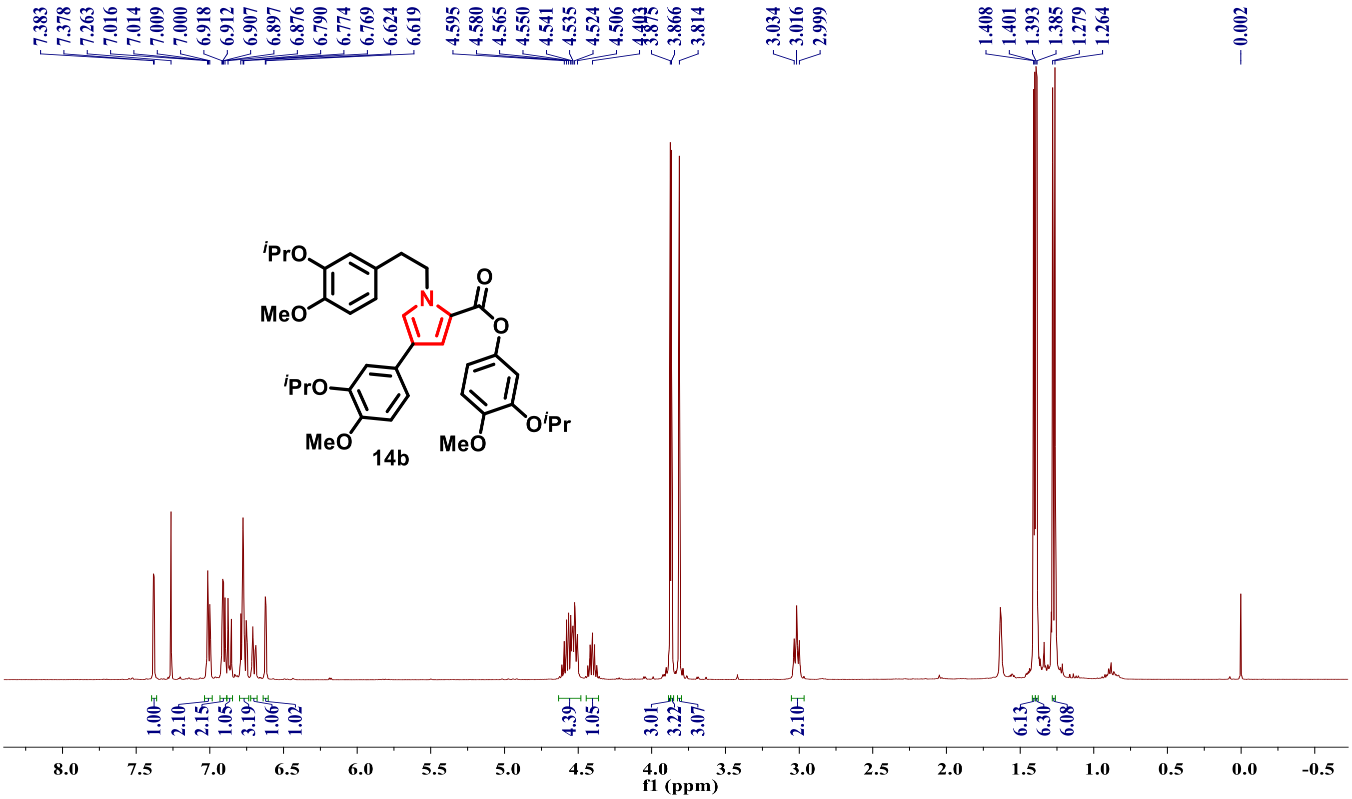
22.108
^{i}PrO
MeO
N
O
OH
^{i}PrO
MeO
13
f1 (ppm)



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6.774
6.769
6.624
6.619
4.595
4.580
4.565
4.550
4.541
4.535
4.524
4.506
4.403
3.875
3.866
3.814
3.034
3.016
2.999
1.408
1.401
1.393
1.385
1.279
1.264
0.002
^{i}PrO
MeO
N
O
O
^{i}PrO
MeO
MeO
O^{i}Pr
14b
1.00
2.10
2.15
1.05
3.19
1.06
1.02
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1.05
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6.13
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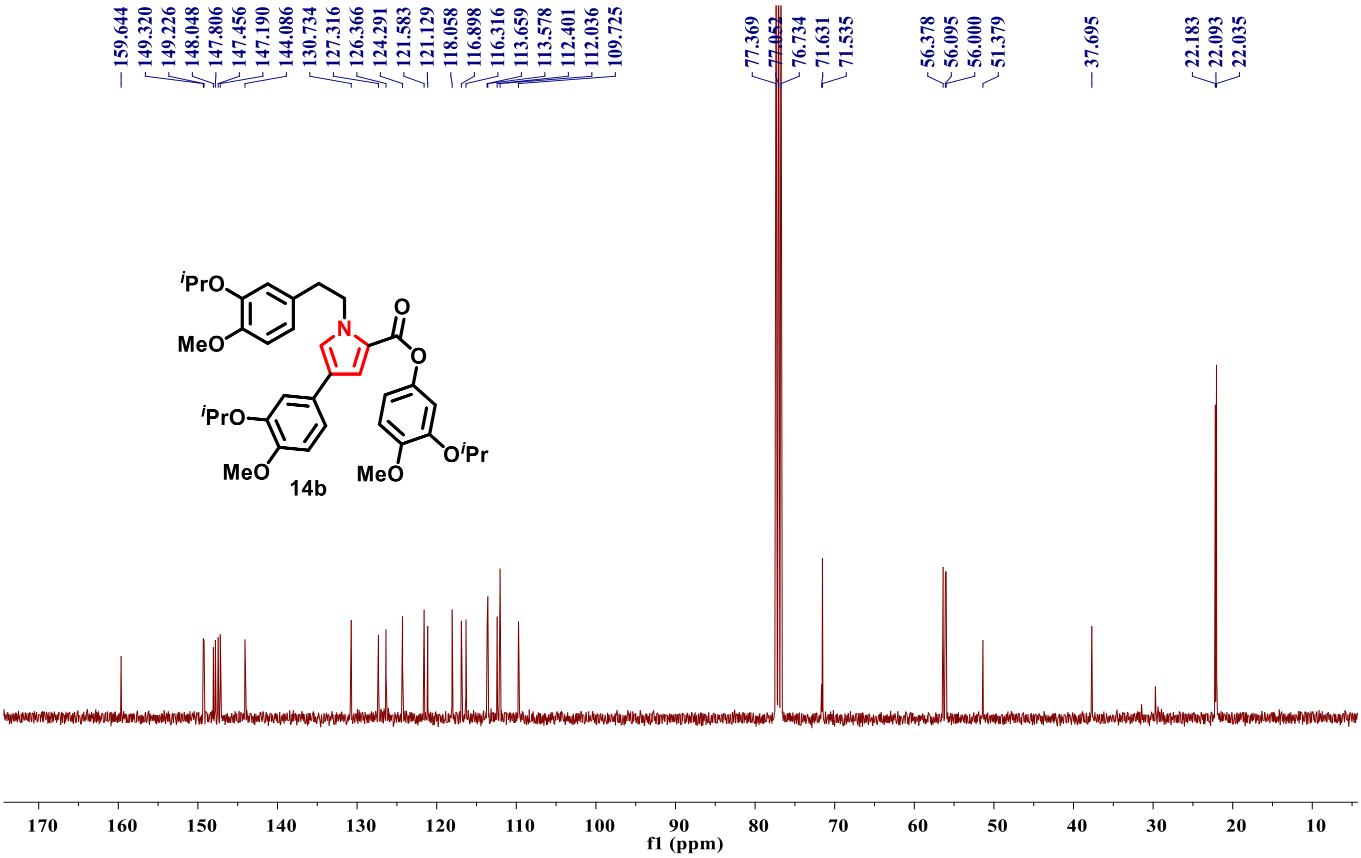
6.08
f1 (ppm)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109.725
77.369
77.052
76.734
71.631
71.535
56.378
56.095
56.000
51.379
37.695
22.183
22.093
22.035
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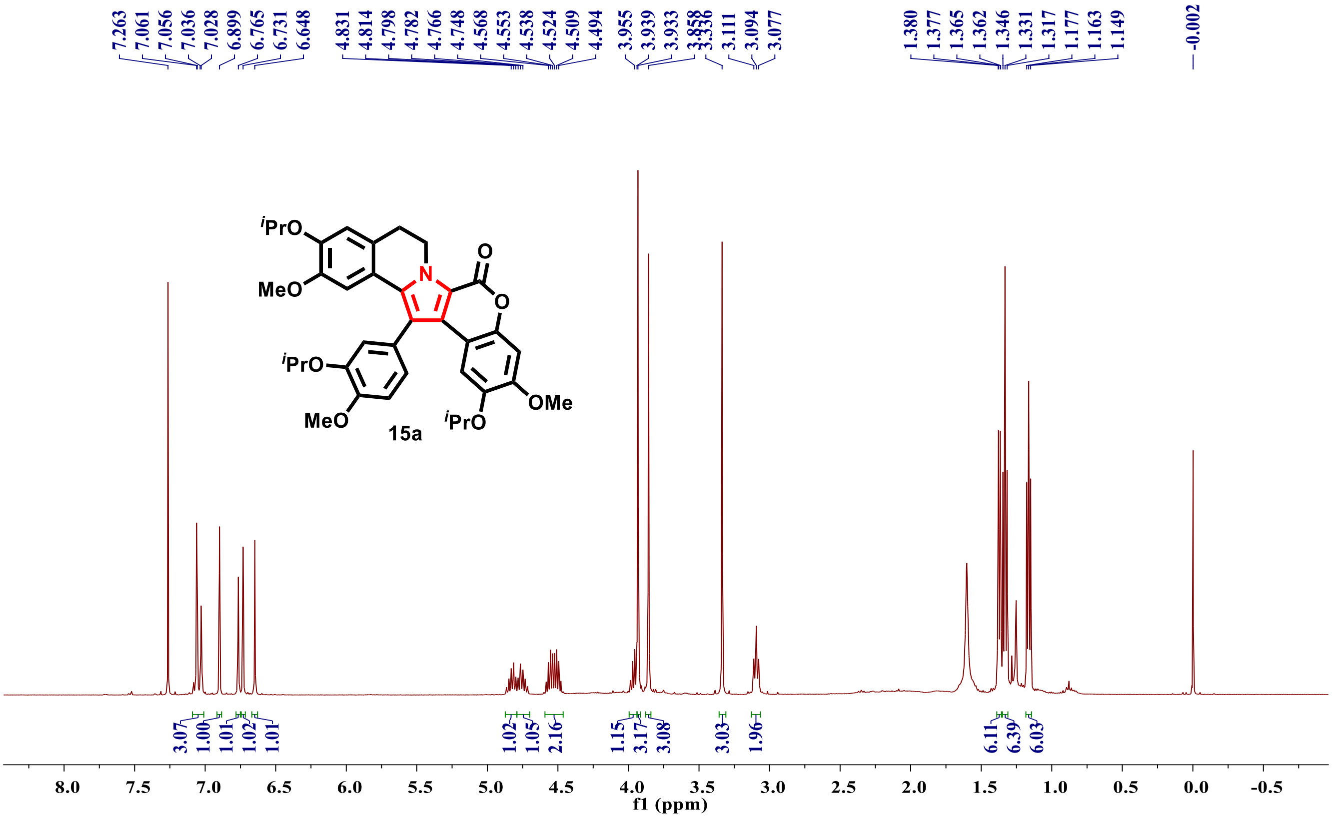
MeO
N
O
O
^{i}PrO
MeO
MeO
O^{i}Pr
14b
f1 (ppm)



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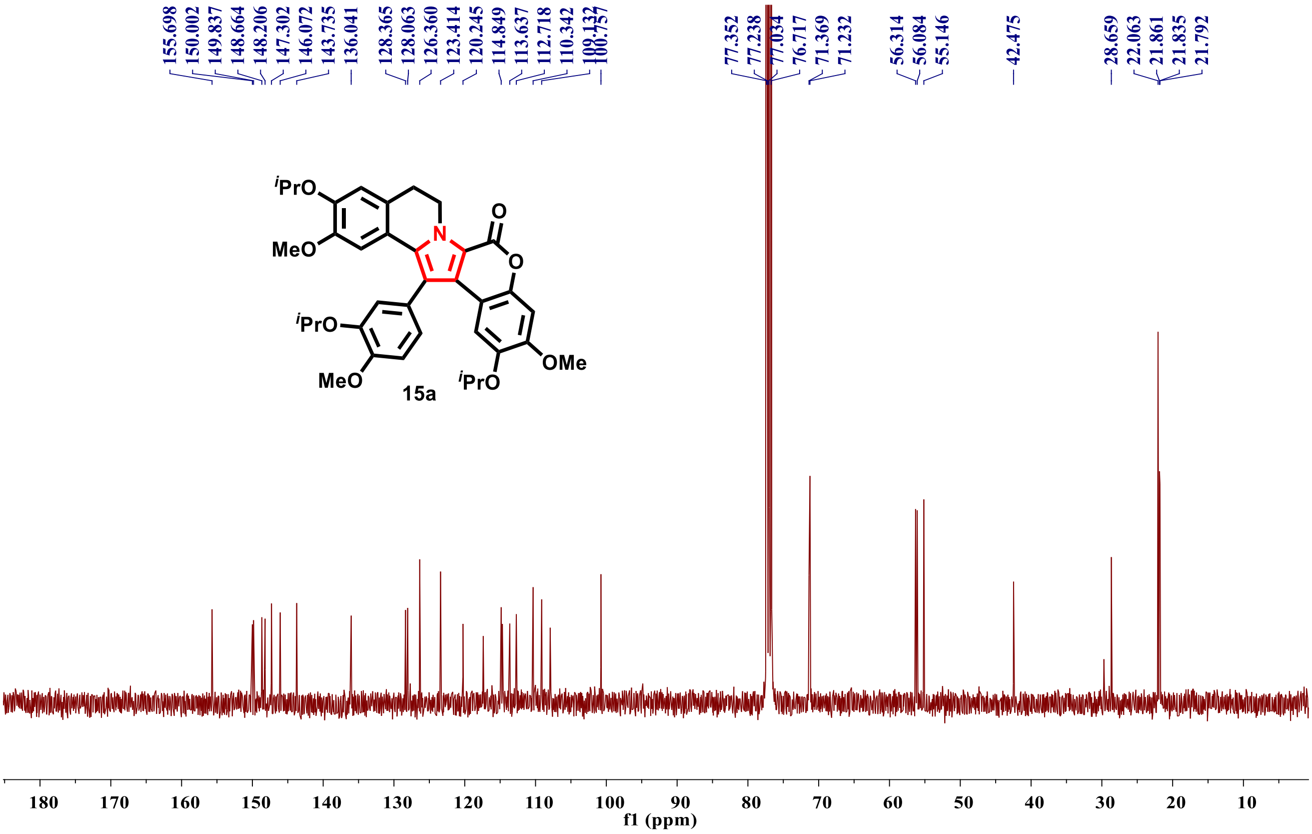
4.831 4.814 4.798 4.782 4.766 4.748 4.568 4.553 4.538 4.524 4.509 4.494
3.955 3.939 3.933 3.858 3.336 3.111 3.094 3.077
1.380 1.377 1.365 1.362 1.346 1.331 1.317 1.177 1.163 1.149
-0.002
iPrO
MeO
N
O
iPrO
MeO
OMe
iPrO
15a
3.07 1.00 1.01 1.02 1.01 1.02 1.05 2.16 1.15 3.17 3.08 3.03 1.96 6.11 6.39 6.03
f1 (ppm)



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128.365 128.063 126.360 123.414 120.245 114.849 113.637 112.718 110.342 109.132 100.757
77.352 77.238 77.034 76.717 71.369 71.232
56.314 56.084 55.146 42.475
28.659 22.063 21.861 21.835 21.792
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N
O
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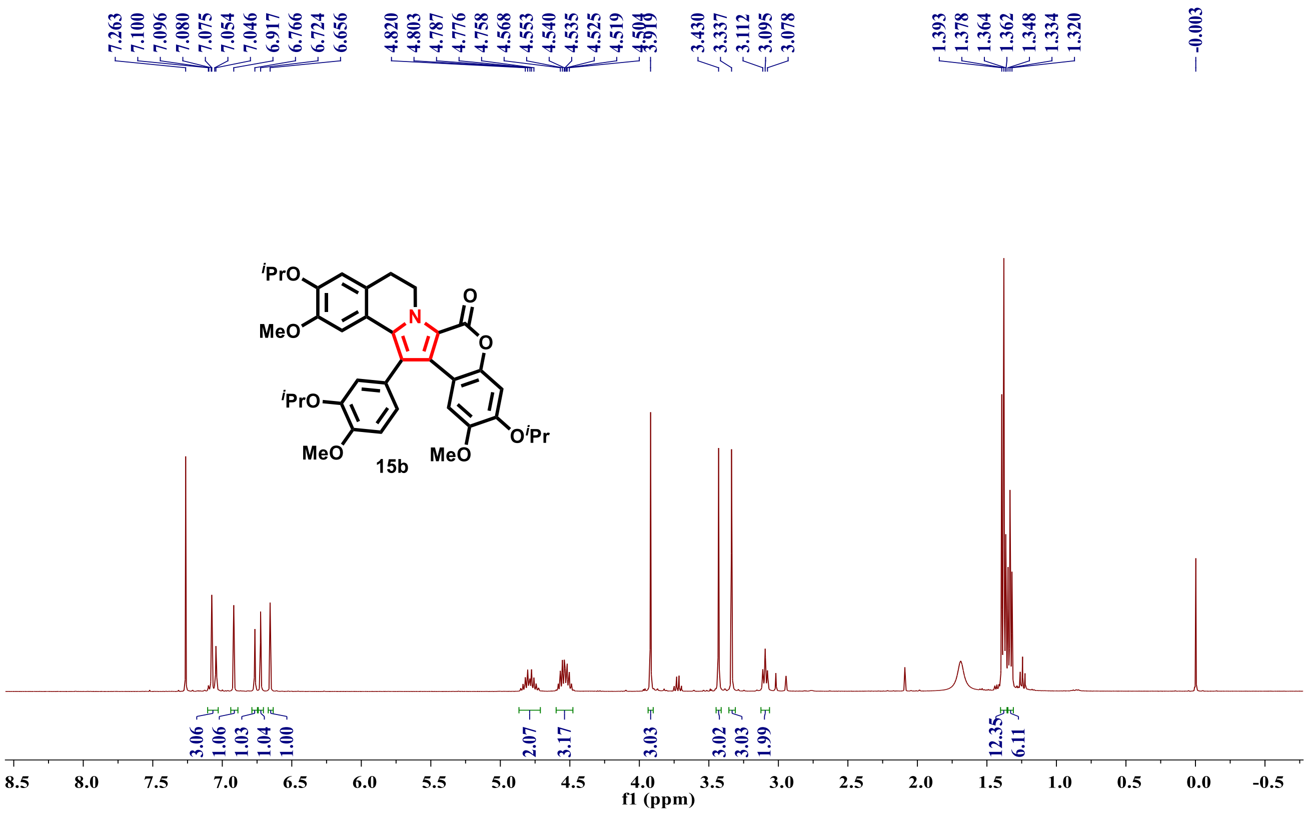
MeO
OMe
iPrO
15a
f1 (ppm)



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6.724
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4.820
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4.787
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4.758
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4.553
4.540
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4.525
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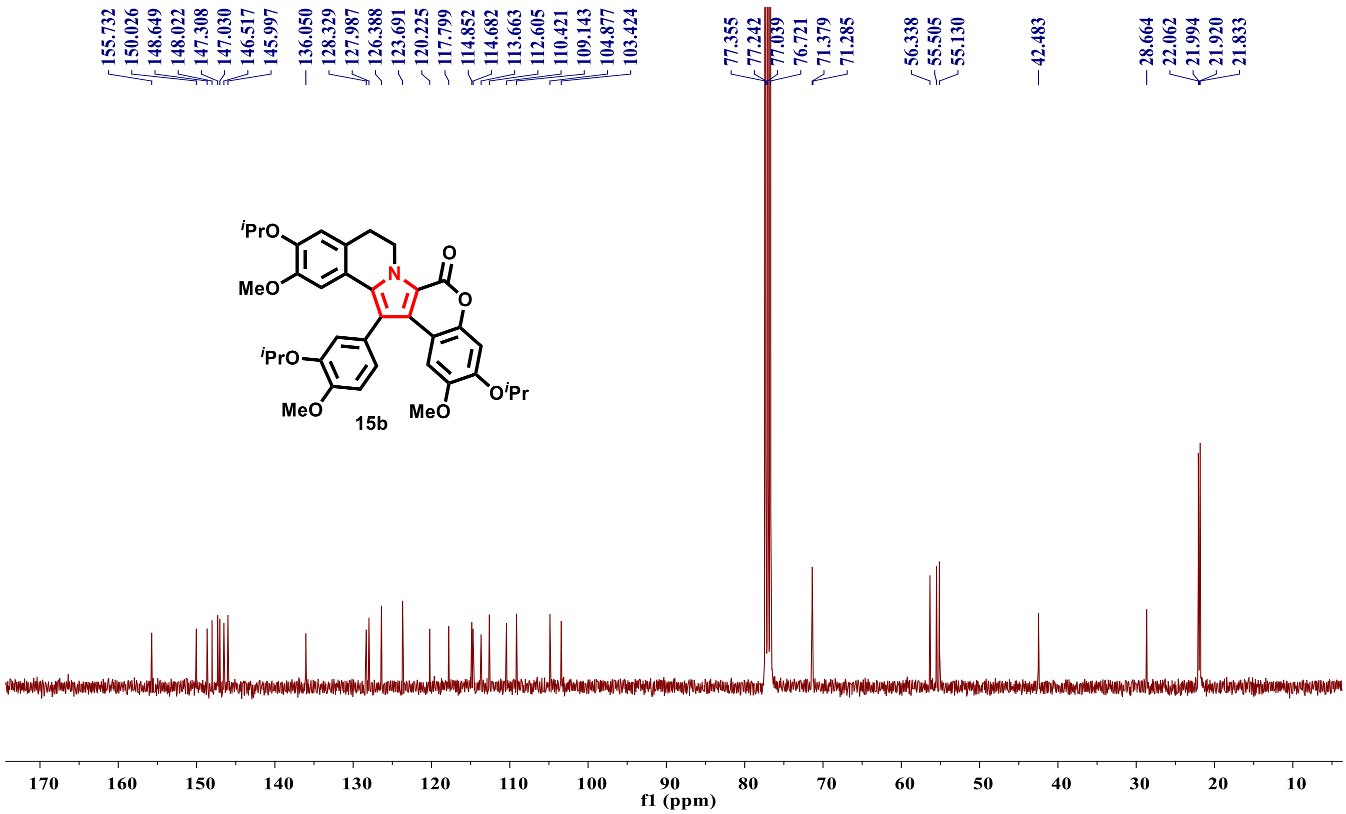
4.504
3.919
3.430
3.337
3.112
3.095
3.078
1.393
1.378
1.364
1.362
1.348
1.334
1.320
-0.003
ⁱPrO
MeO
N
O
O
ⁱPrO
MeO
15b
MeO
OⁱPr
3.06
1.06
1.03
1.04
1.00
2.07
3.17
3.03
3.02
3.03
1.99
12.35
6.11
f1 (ppm)



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147.030
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128.329
127.987
126.388
123.691
120.225
117.799
114.852
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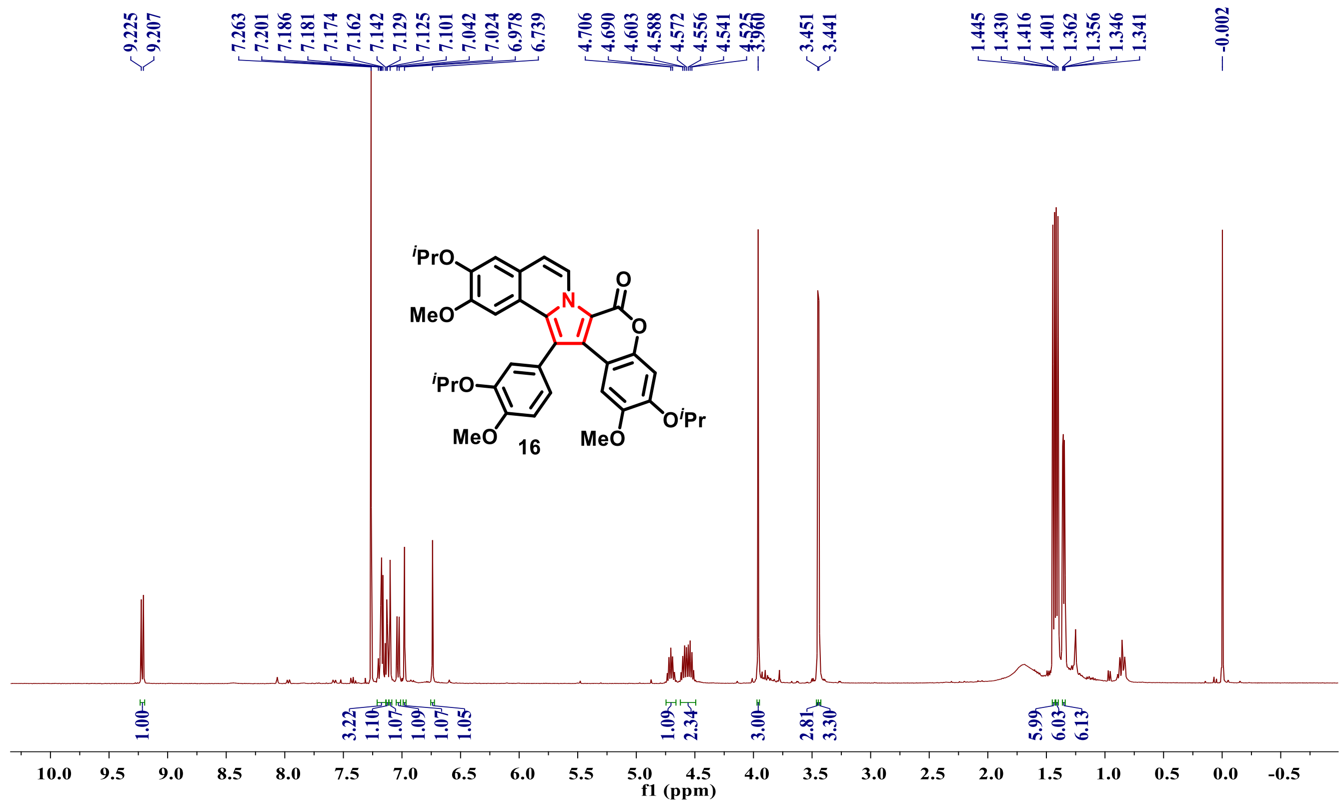
109.143
104.877
103.424
77.355
77.242
77.039
76.721
71.379
71.285
56.338
55.505
55.130
42.483
28.664
22.062
21.994
21.920
21.833
ⁱPrO
MeO
N
O
O
ⁱPrO
MeO
15b
MeO
OⁱPr
f1 (ppm)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7.042
7.024
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4.572
4.556
4.541
4.525
3.960
3.451
3.441
1.445
1.430
1.416
1.401
1.362
1.356
1.346
1.341
-0.002
ⁱPrO
MeO
N
O
O
ⁱPrO
MeO
16
MeO
OⁱPr
1.00
3.22
1.10
1.07
1.09
1.07
1.05
1.09
2.34
3.00
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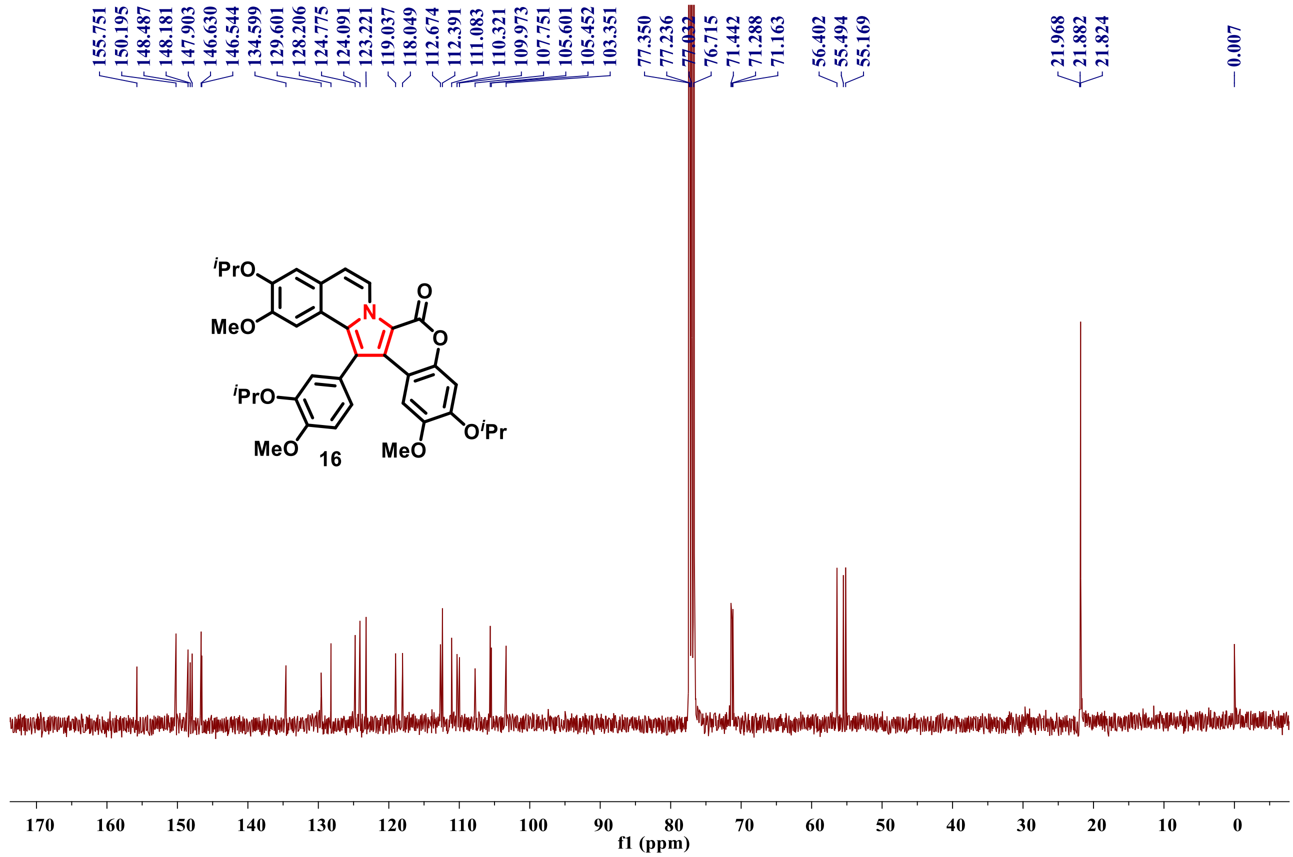
5.99
6.03
6.13
f1 (ppm)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123.221
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112.674
112.391
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107.751
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103.351
77.350
77.236
77.032
76.715
71.442
71.288
71.163
56.402
55.494
55.169
21.968
21.882
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ⁱPrO
MeO
N
O
O
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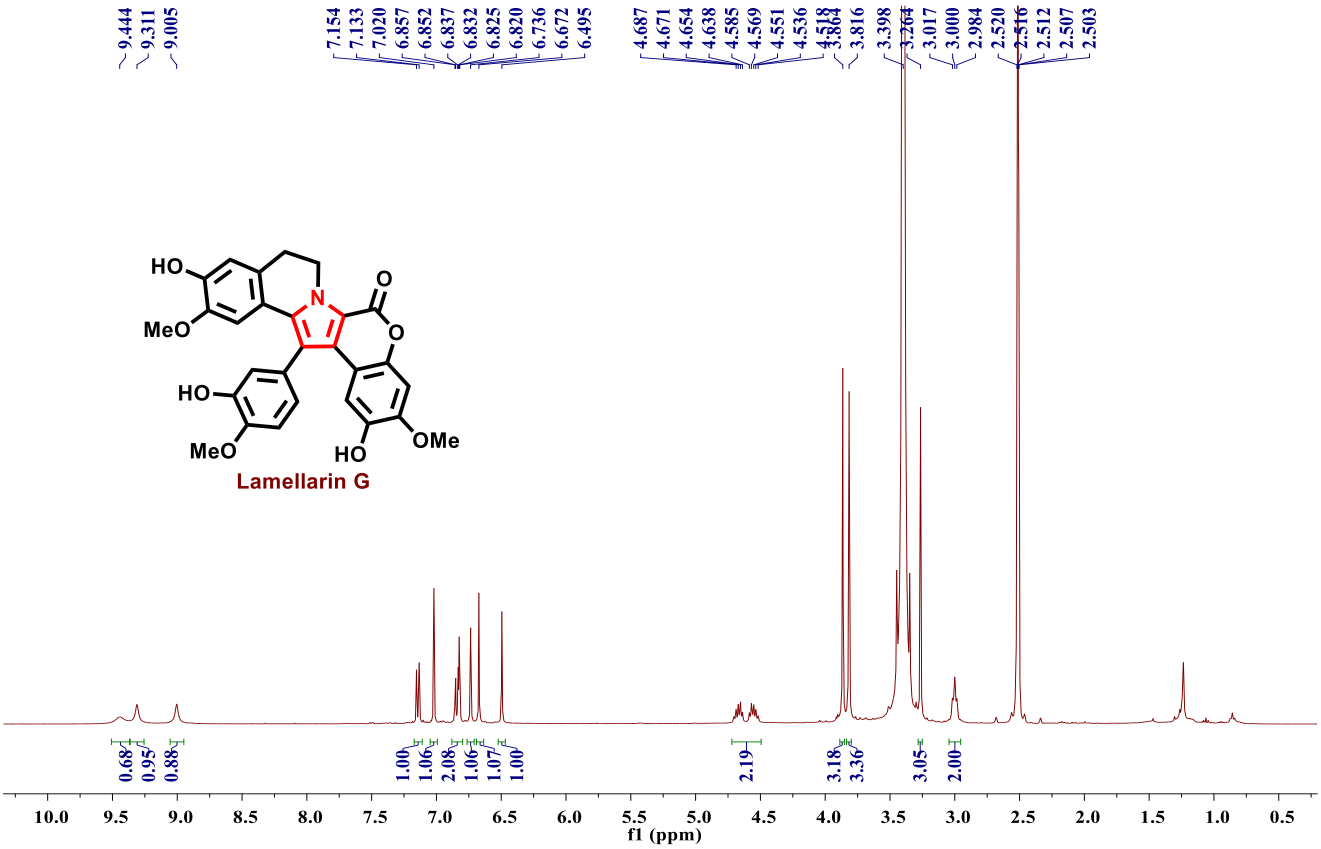
MeO
16
MeO
OⁱPr
f1 (ppm)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6.495
4.687
4.671
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4.585
4.569
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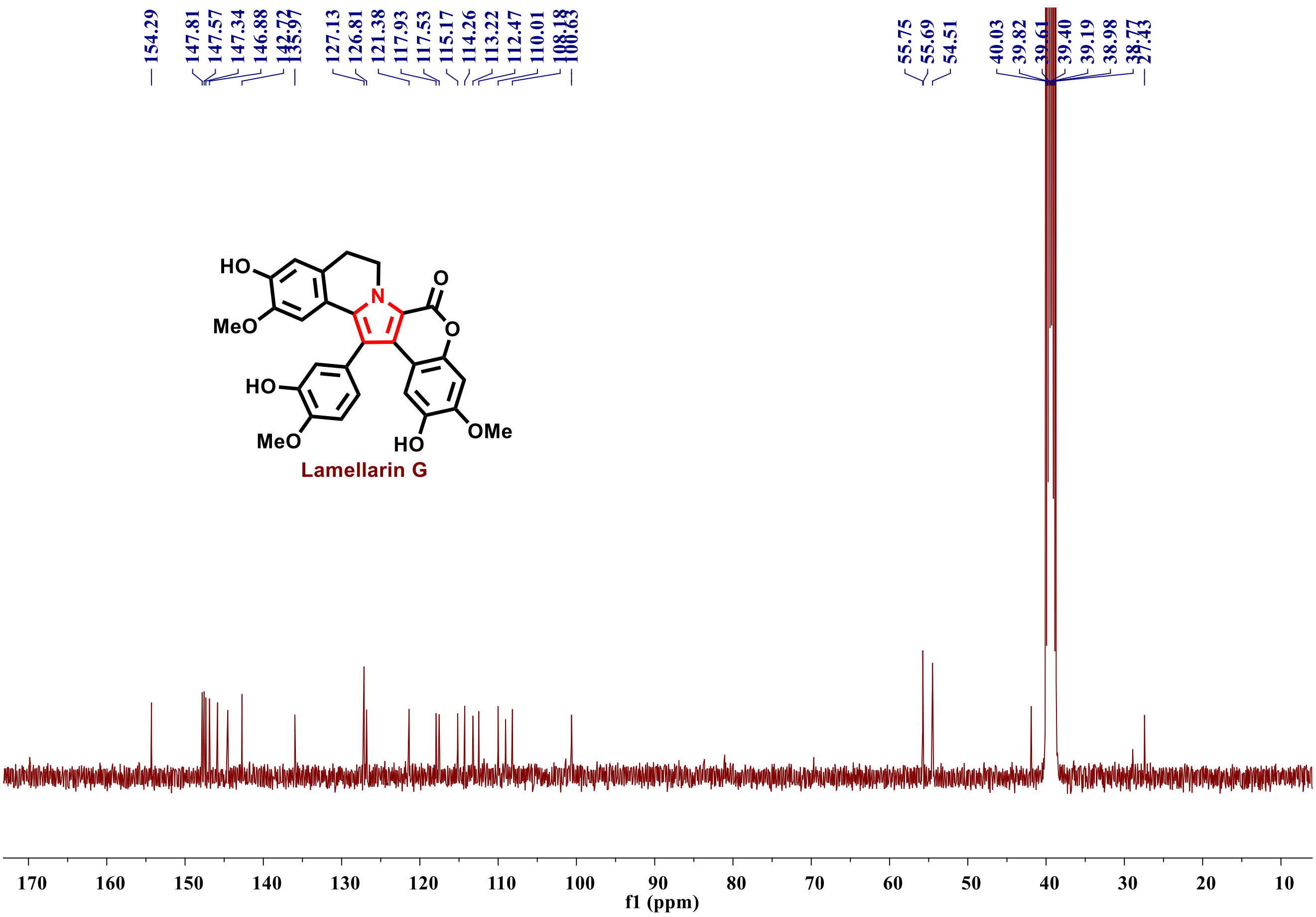
3.864
3.816
3.398
3.264
3.017
3.000
2.984
2.520
2.516
2.512
2.507
2.503
HO
MeO
N
O
O
HO
MeO
HO
OMe
Lamellarin G
0.68
0.95
0.88
1.00
1.06
2.08
1.06
1.07
1.00
2.19
3.18
3.36
3.05
2.00
10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5
f1 (ppm)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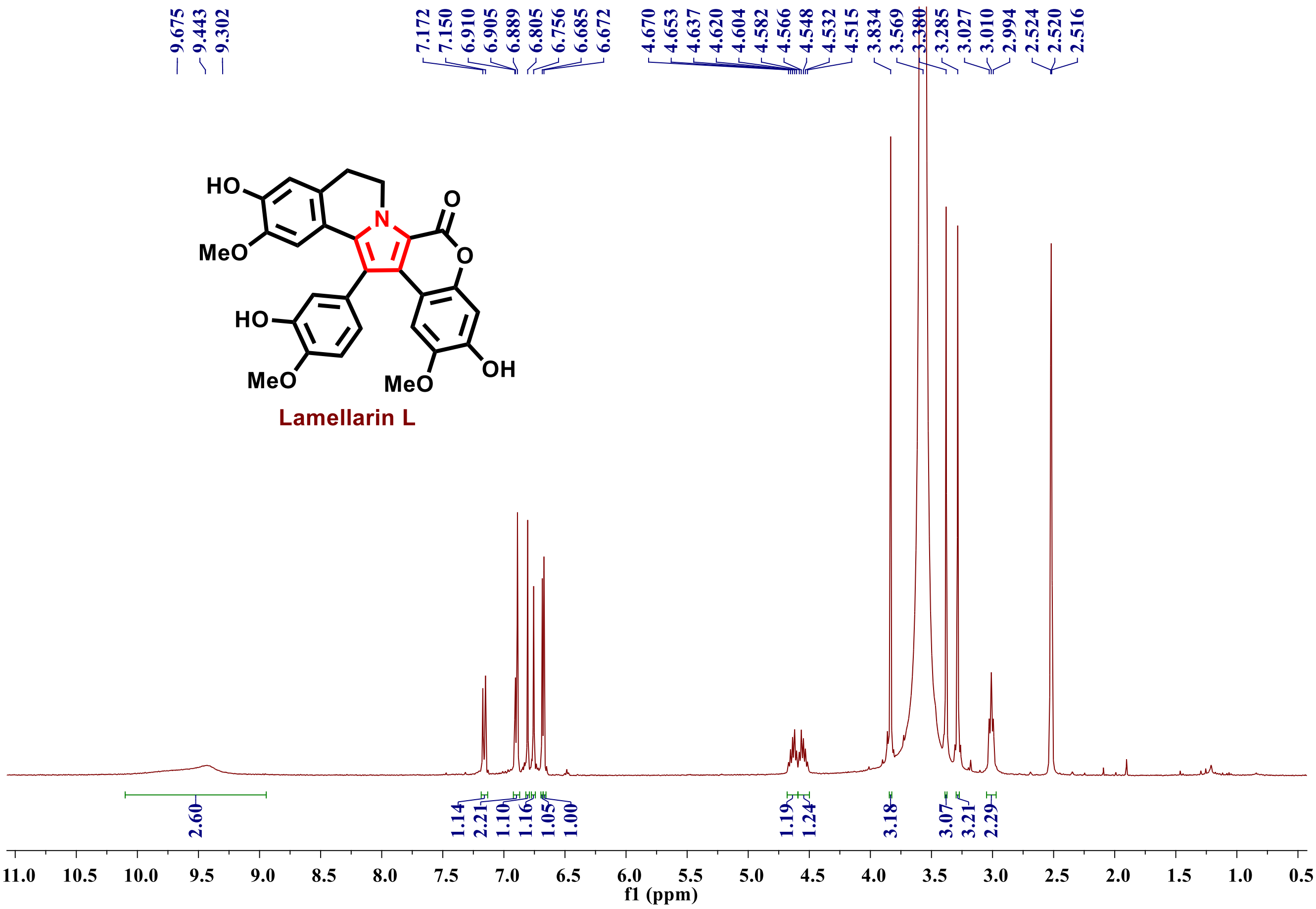
147.81
147.57
147.34
146.88
135.97
127.13
126.81
121.38
117.93
117.53
115.17
114.26
113.22
112.47
110.01
55.75
55.69
54.51
40.03
39.82
39.61
39.40
39.19
38.98
HO
MeO
N
O
O
HO
MeO
HO
OMe
Lamellarin G
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10
f1 (ppm)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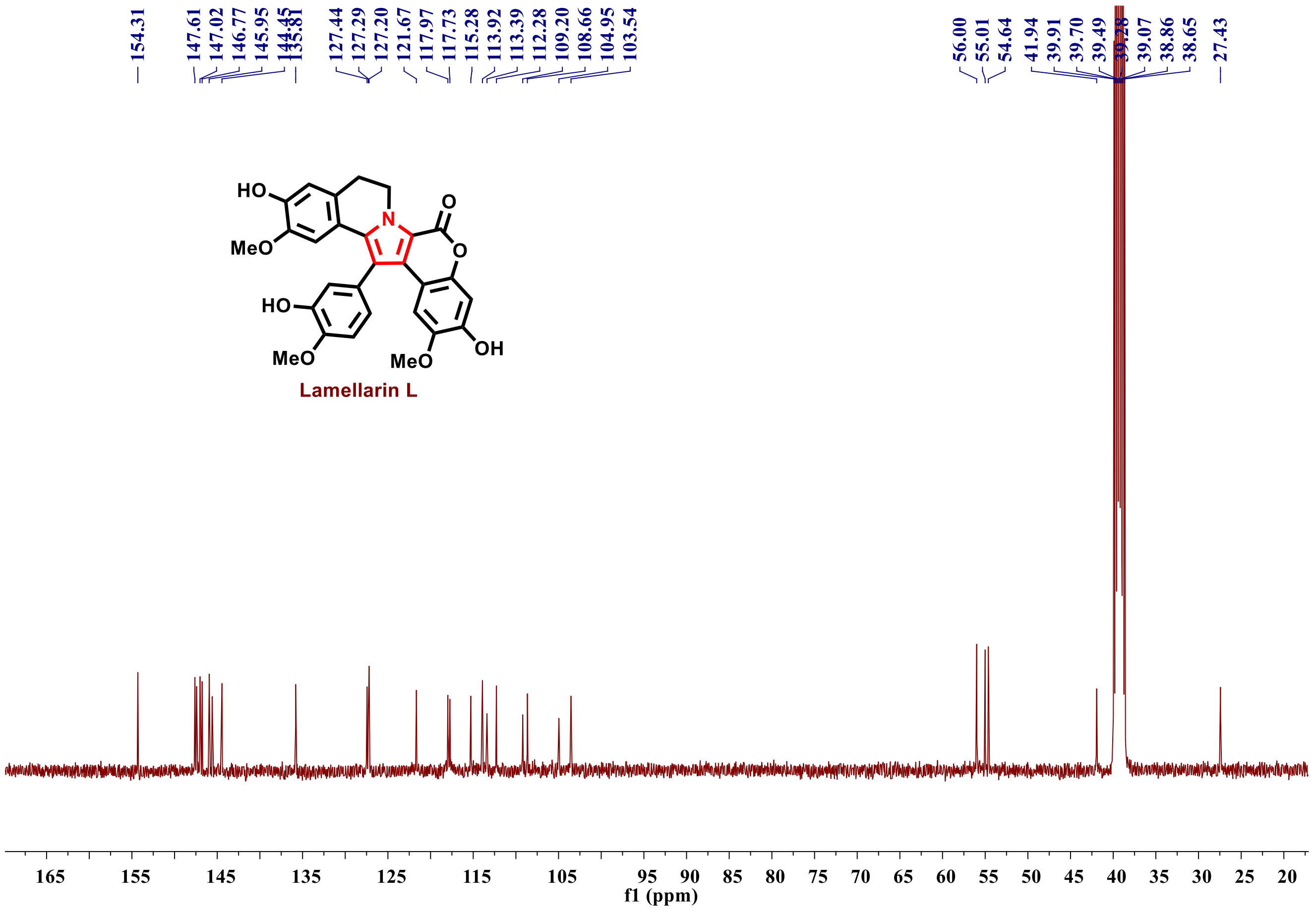
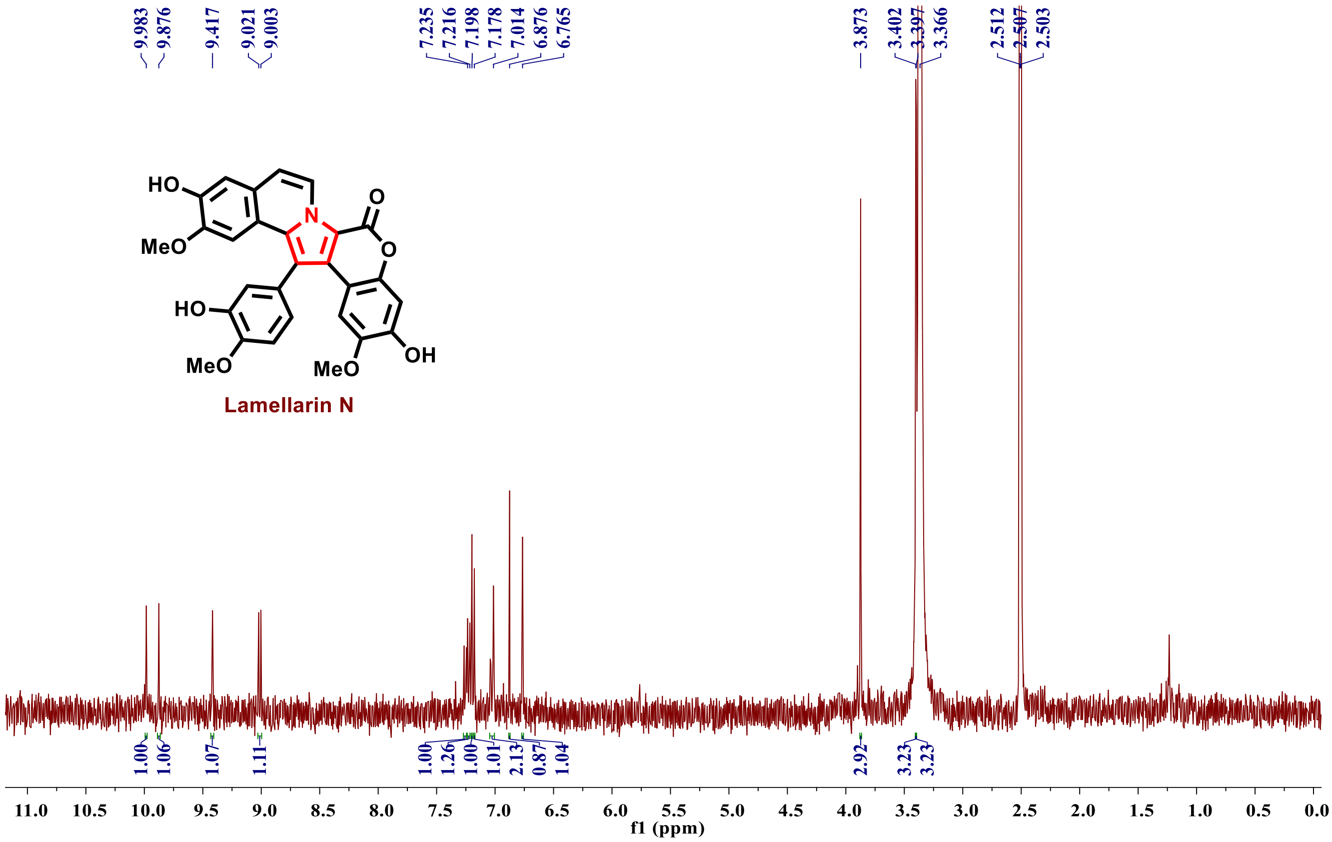
9.443
9.302
7.172
7.150
6.910
6.905
6.889
6.805
6.756
6.685
6.672
4.670
4.653
4.637
4.620
4.604
4.582
4.566
4.548
4.532
4.515
3.834
3.569
3.380
3.285
3.027
3.010
2.994
2.524
2.520
2.516
HO
MeO
HO
MeO
MeO
OH
N
O
O
Lamellarin L
2.60
1.14
2.21
1.10
1.16
1.05
1.00
1.19
1.24
3.18
3.07
3.21
2.29
f1 (ppm)


154.31
147.61
147.02
146.77
145.95
144.45
135.81
127.44
127.29
127.20
121.67
117.97
117.73
115.28
113.92
113.39
112.28
109.20
108.66
104.95
103.54
56.00
55.01
54.64
41.94
39.91
39.70
39.49
39.28
39.07
38.86
38.65
27.43
Lamellarin L
f1 (ppm)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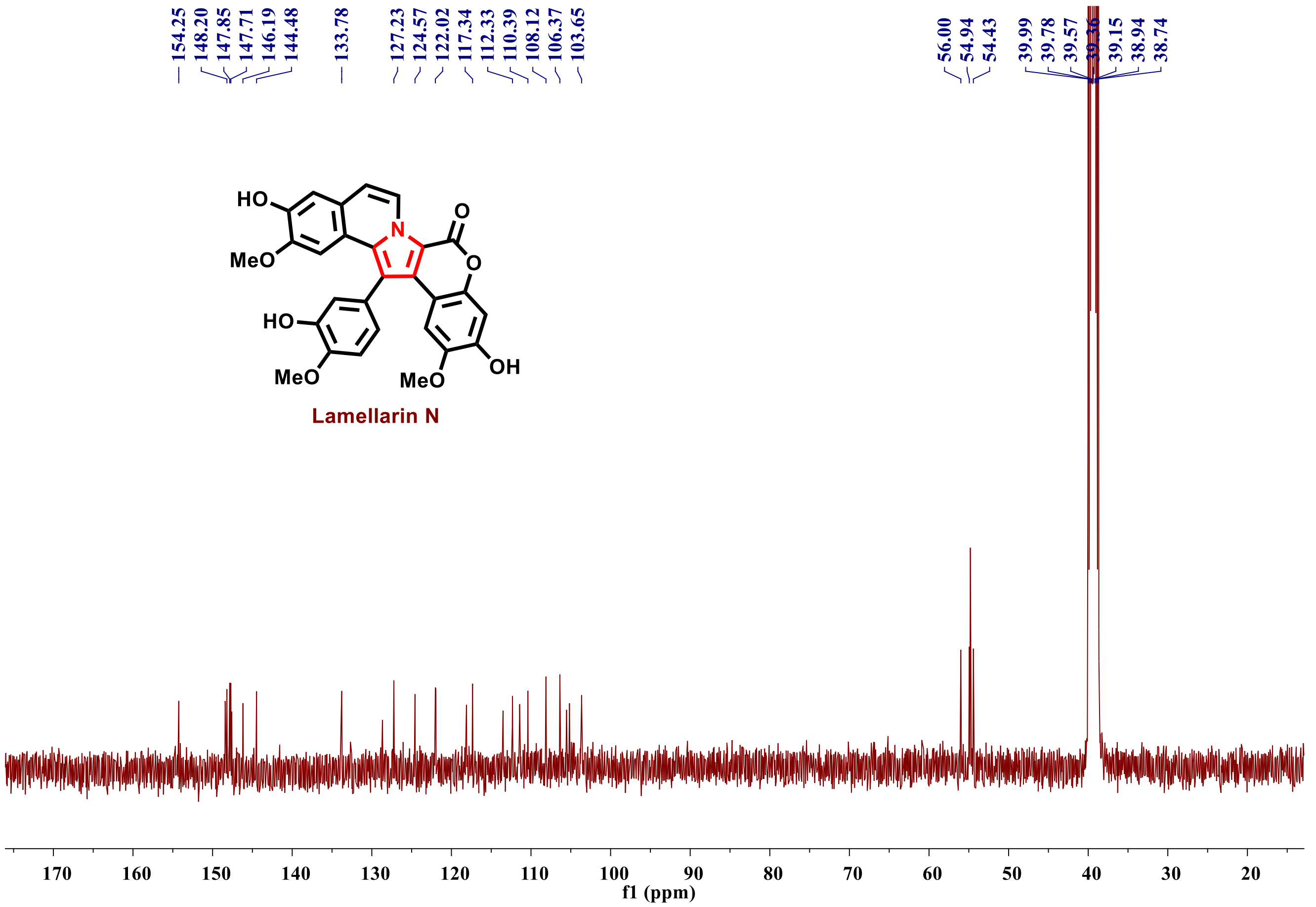
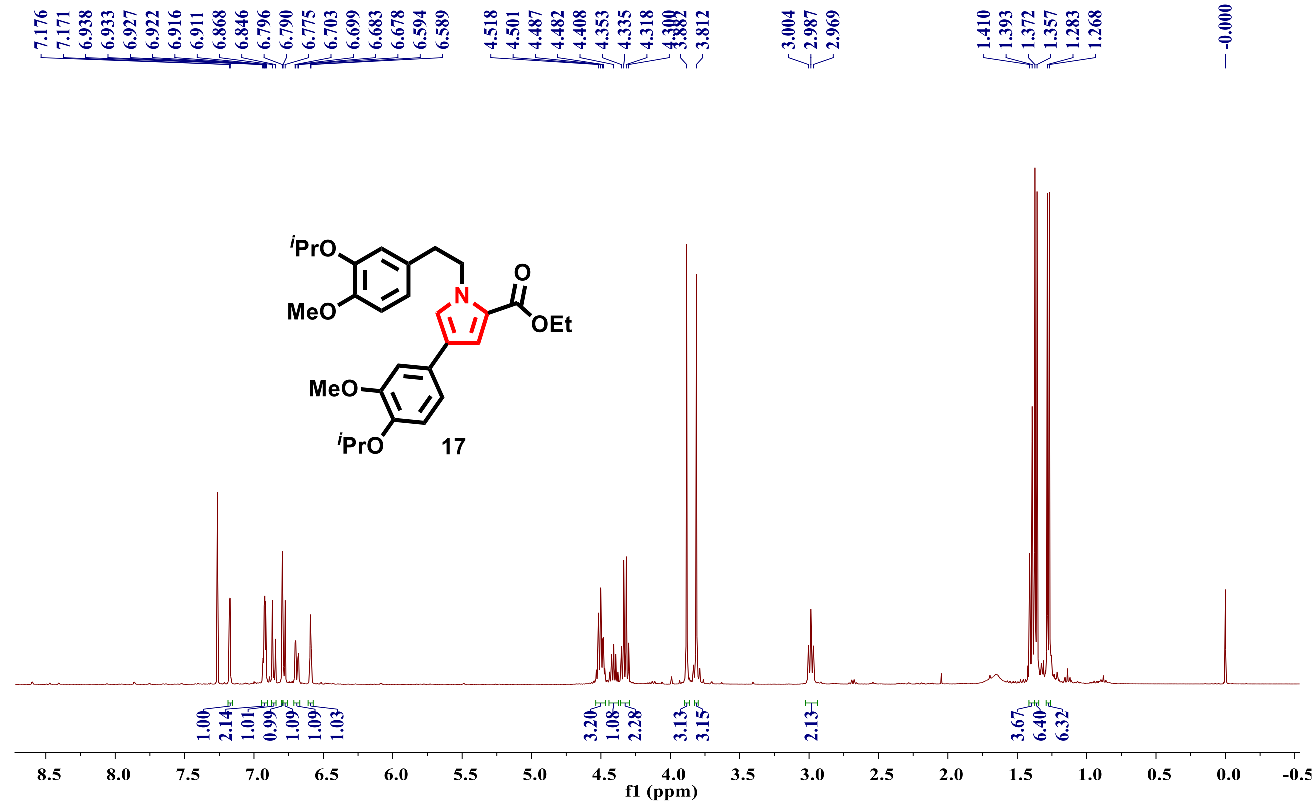
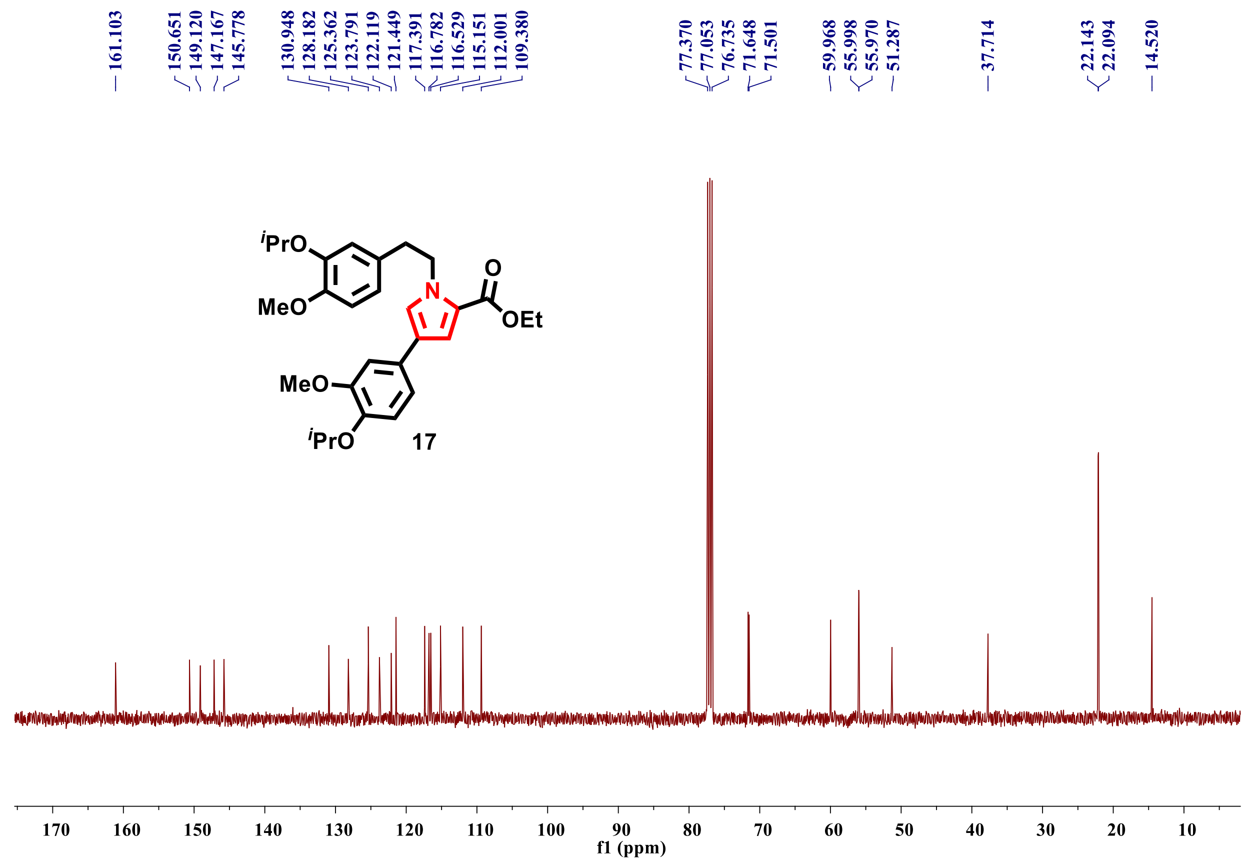
9.876
9.417
9.021
9.003
7.235
7.216
7.198
7.178
7.014
6.876
6.765
3.873
3.402
3.397
3.366
2.512
2.507
2.503
HO
MeO
N
O
O
HO
MeO
MeO
OH
Lamellarin N
1.00
1.06
1.07
1.11
1.00
1.26
1.00
1.01
2.13
0.87
1.04
2.92
3.23
3.23
f1 (ppm)

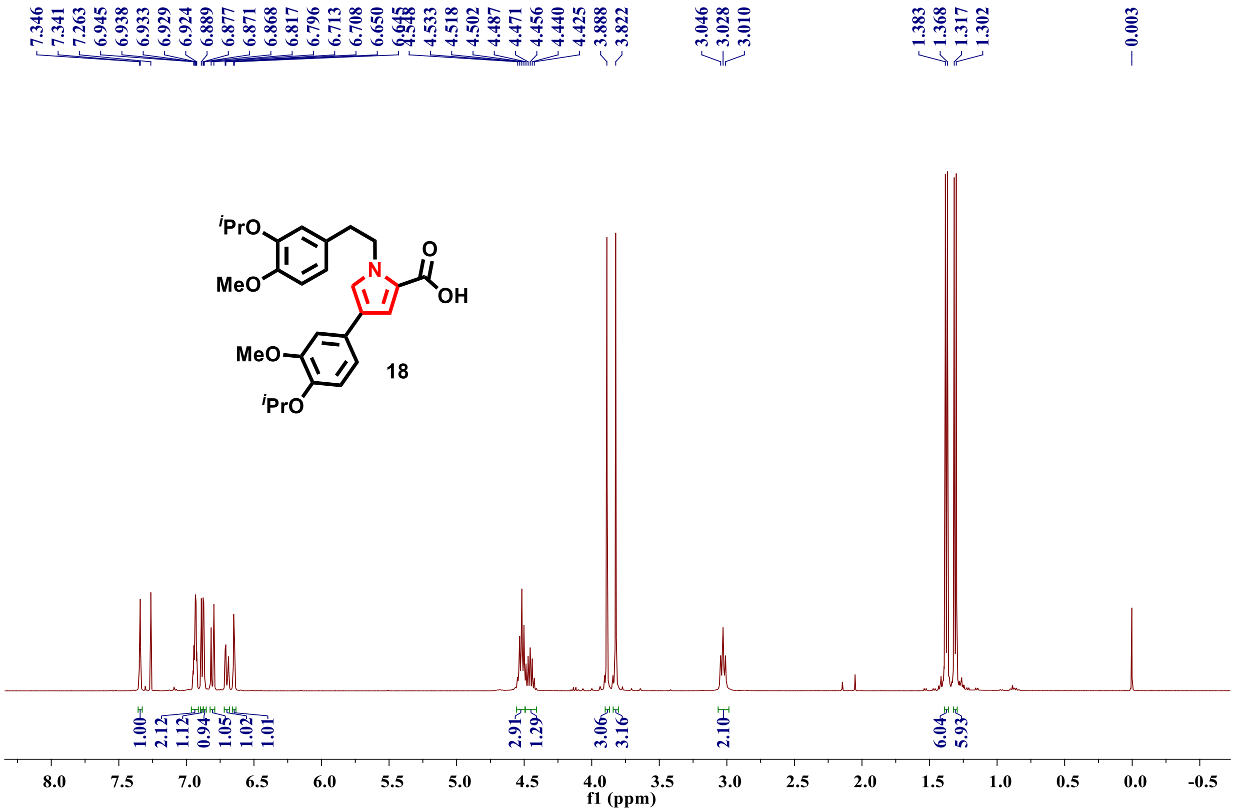

154.25
148.20
147.85
147.71
146.19
144.48
133.78
127.23
124.57
122.02
117.34
112.33
110.39
108.12
106.37
103.65
56.00
54.94
54.43
39.99
39.78
39.57
39.15
38.94
38.74
HO
MeO
N
O
O
HO
MeO
MeO
OH
Lamellarin N
f1 (ppm)

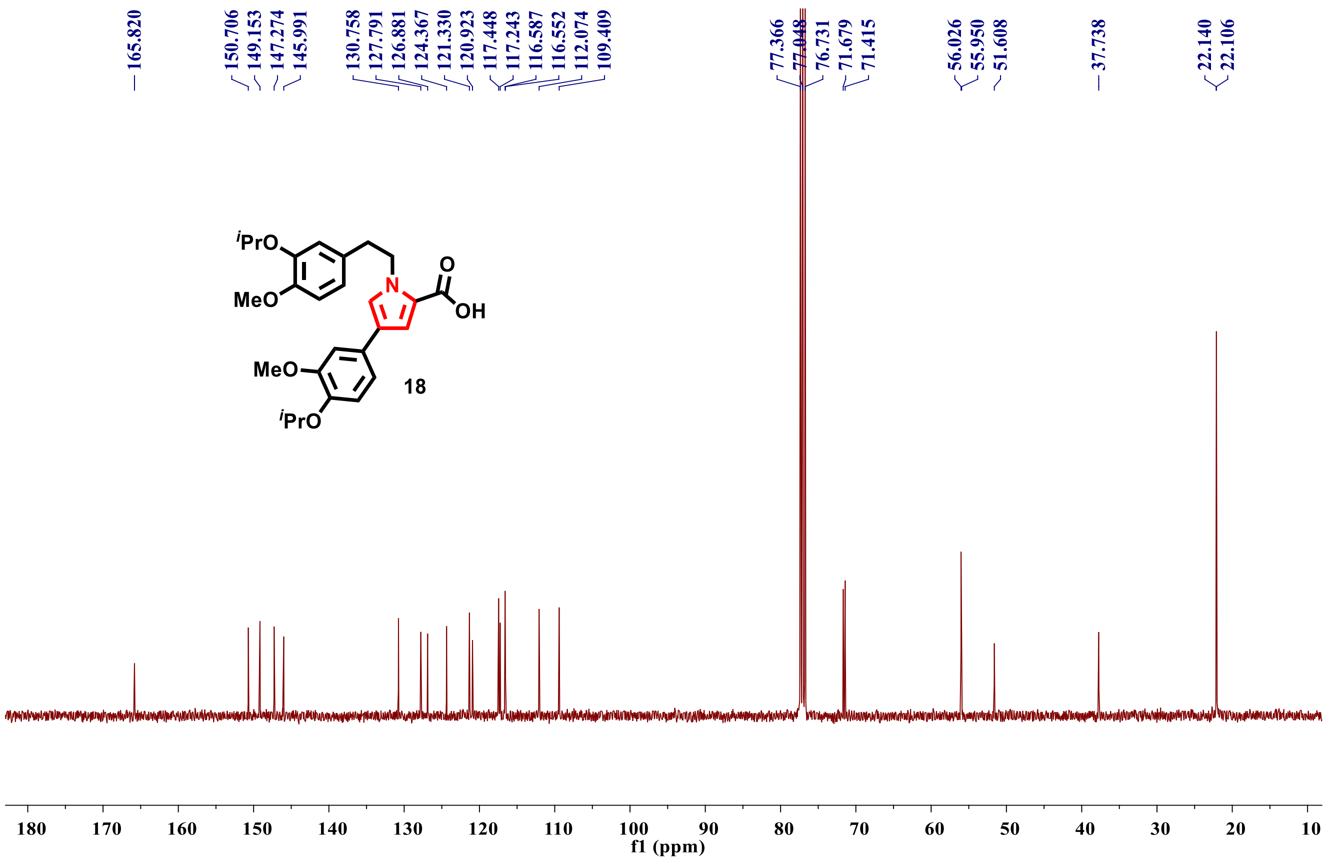


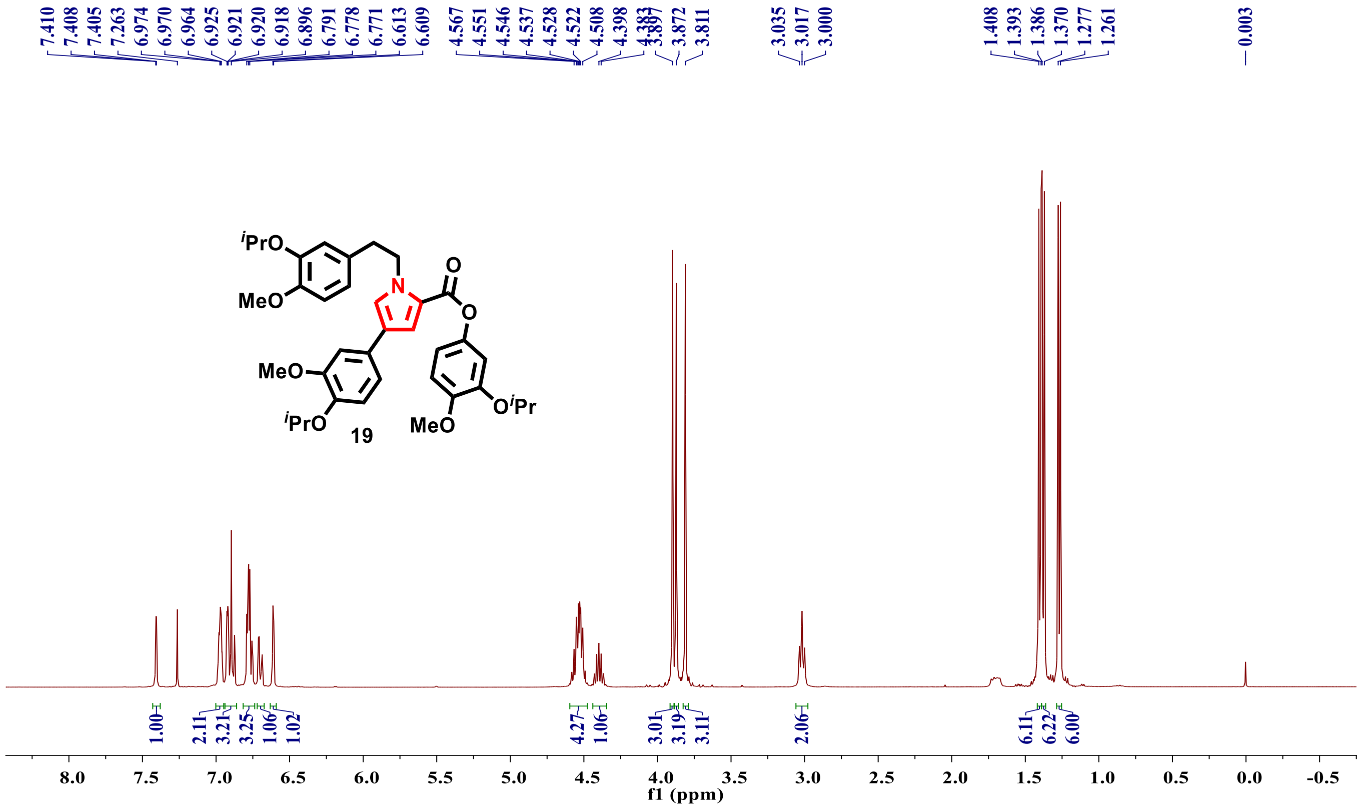
7.176
7.171
6.938
6.933
6.927
6.922
6.916
6.911
6.868
6.846
6.796
6.790
6.775
6.703
6.699
6.683
6.678
6.594
6.589
4.518
4.501
4.487
4.482
4.408
4.353
4.335
4.318
4.300
3.882
3.812
3.004
2.987
2.969
1.410
1.393
1.372
1.357
1.283
1.268
-0.000
^{i}PrO
MeO
O
OEt
N
MeO
^{i}PrO
17
1.00
2.14
1.01
0.99
1.09
1.09
1.03
3.20
1.08
2.28
3.13
3.15
2.13
3.67
6.40
6.32
f1 (ppm)



161.103
150.651
149.120
147.167
145.778
130.948
128.182
125.362
123.791
122.119
121.449
117.391
116.782
116.529
115.151
112.001
109.380
77.370
77.053
76.735
71.648
71.501
59.968
55.998
55.970
51.287
37.714
22.143
22.094
14.520
^{i}PrO
MeO
O
OEt
N
MeO
^{i}PrO
17
f1 (ppm)



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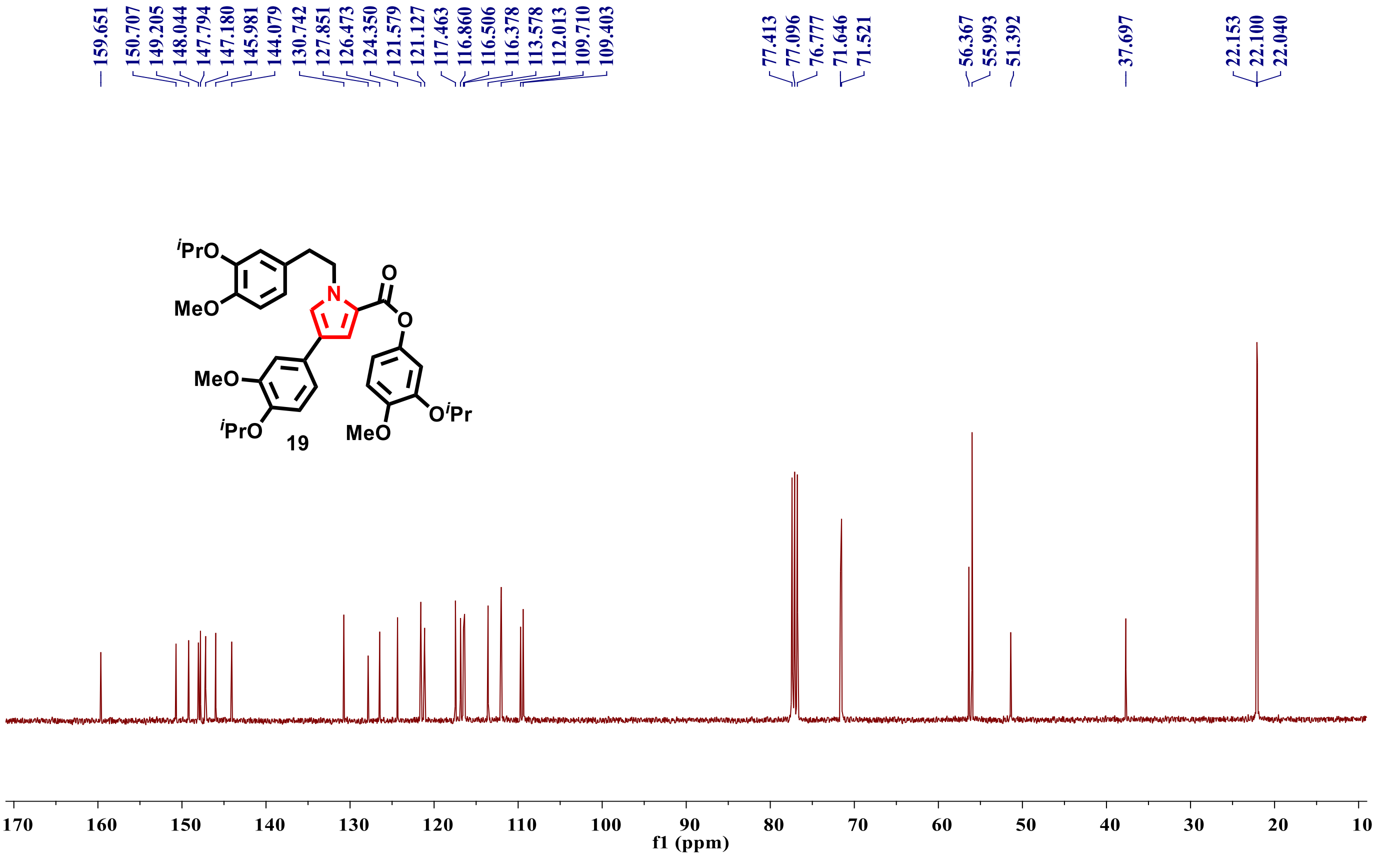
7.408
7.405
7.263
6.974
6.970
6.964
6.925
6.921
6.920
6.918
6.896
6.791
6.778
6.771
6.613
6.609
4.567
4.551
4.546
4.537
4.528
4.522
4.508
4.398
4.383
3.887
3.872
3.811
3.035
3.017
3.000
1.408
1.393
1.386
1.370
1.277
1.261
-0.003
iPrO
MeO
N
O
O
MeO
iPrO
19
MeO
OiPr
1.00
2.11
3.21
3.25
1.06
1.02
4.27
1.06
3.01
3.19
3.11
2.06
6.11
6.22
6.00
8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5
f1 (ppm)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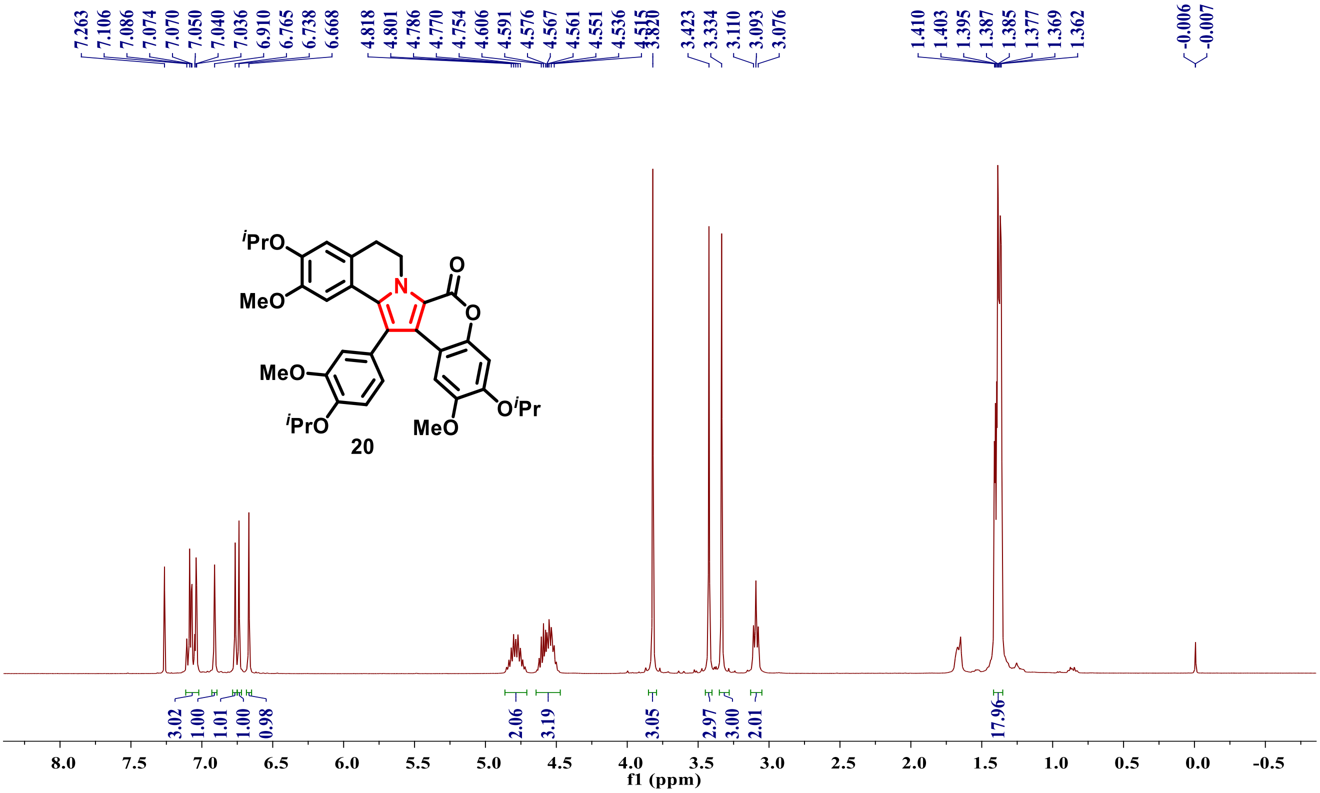
150.707
149.205
148.044
147.794
147.180
145.981
144.079
130.742
127.851
126.473
124.350
121.579
121.127
117.463
116.860
116.506
116.378
113.578
112.013
109.710
109.403
77.413
77.096
76.777
71.646
71.521
56.367
55.993
51.392
37.697
22.153
22.100
22.040
iPrO
MeO
N
O
O
MeO
iPrO
19
MeO
OiPr
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10
f1 (ppm)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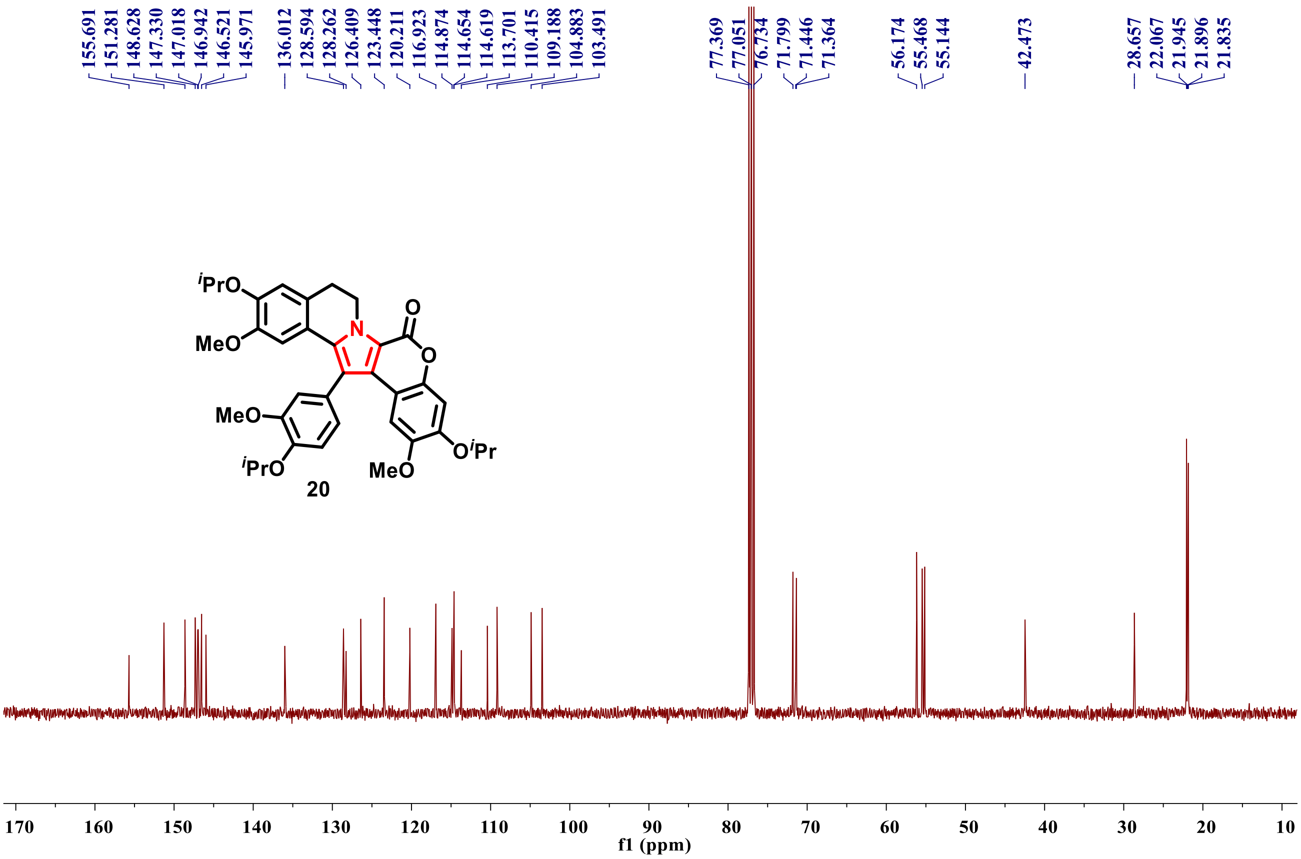
7.106
7.086
7.074
7.070
7.050
7.040
7.036
6.910
6.765
6.738
6.668
4.818
4.801
4.786
4.770
4.754
4.606
4.591
4.576
4.567
4.561
4.551
4.536
4.515
3.820
3.423
3.334
3.110
3.093
3.076
1.410
1.403
1.395
1.387
1.385
1.377
1.369
1.362
-0.006
-0.007
iPrO
MeO
N
O
O
MeO
iPrO
MeO
OiPr
20
3.02
1.00
1.01
1.00
0.98
2.06
3.19
3.05
2.97
3.00
2.01
17.96
f1 (ppm)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145.971
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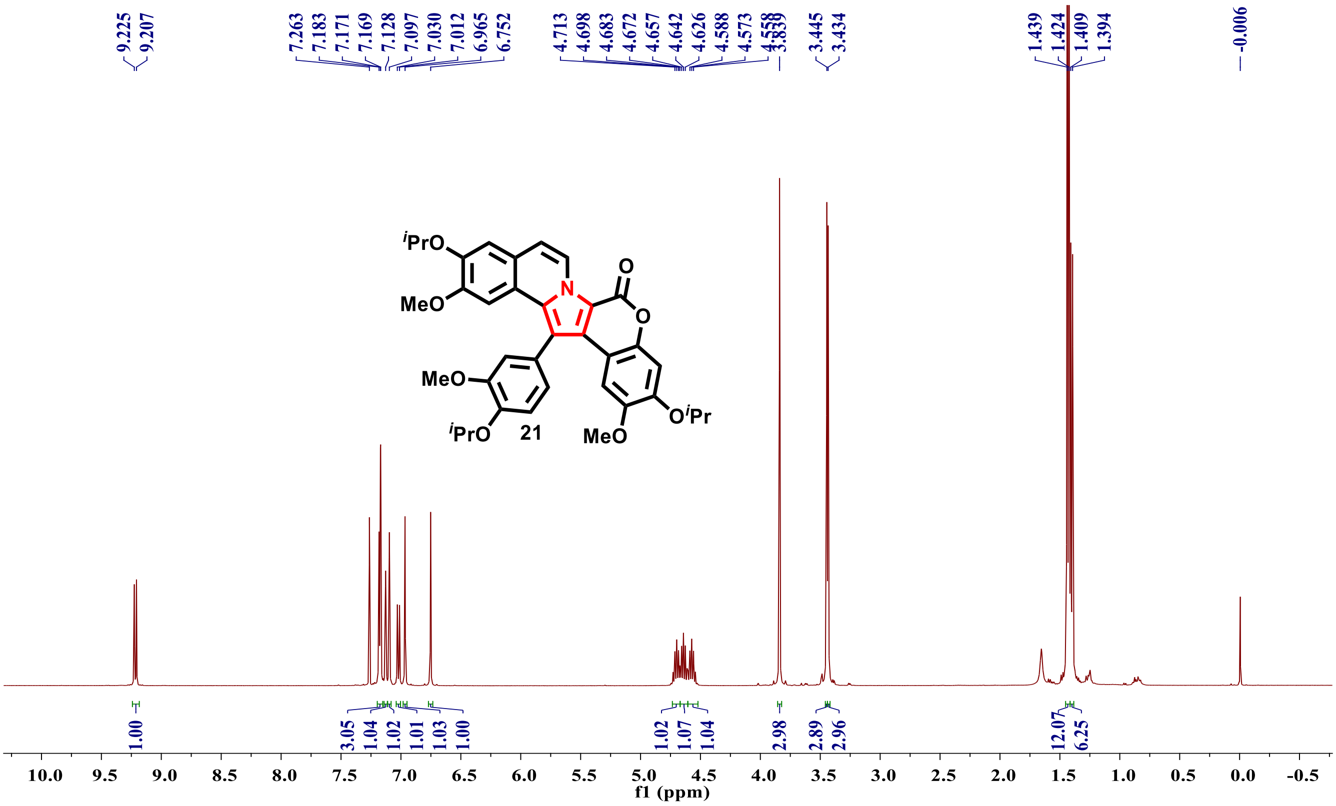
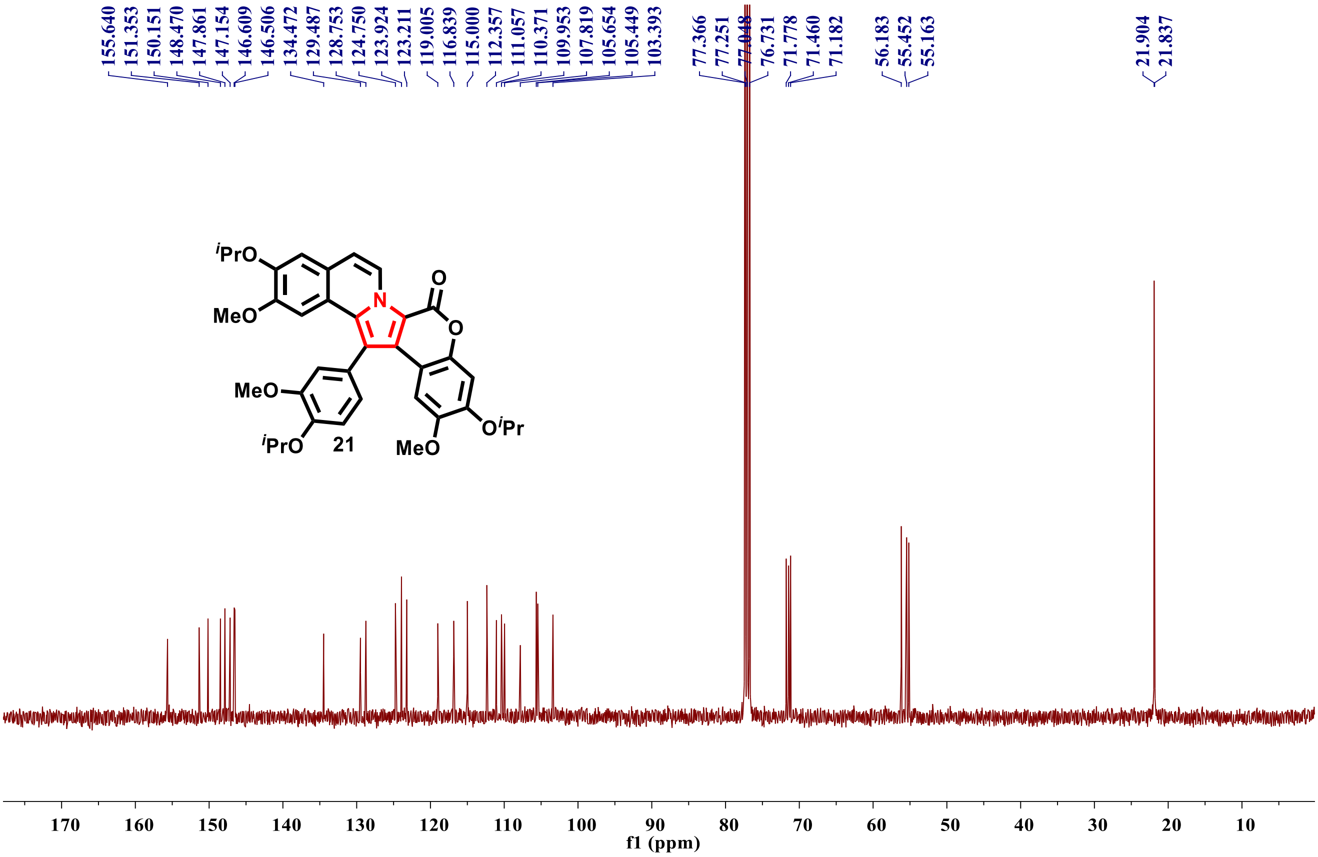
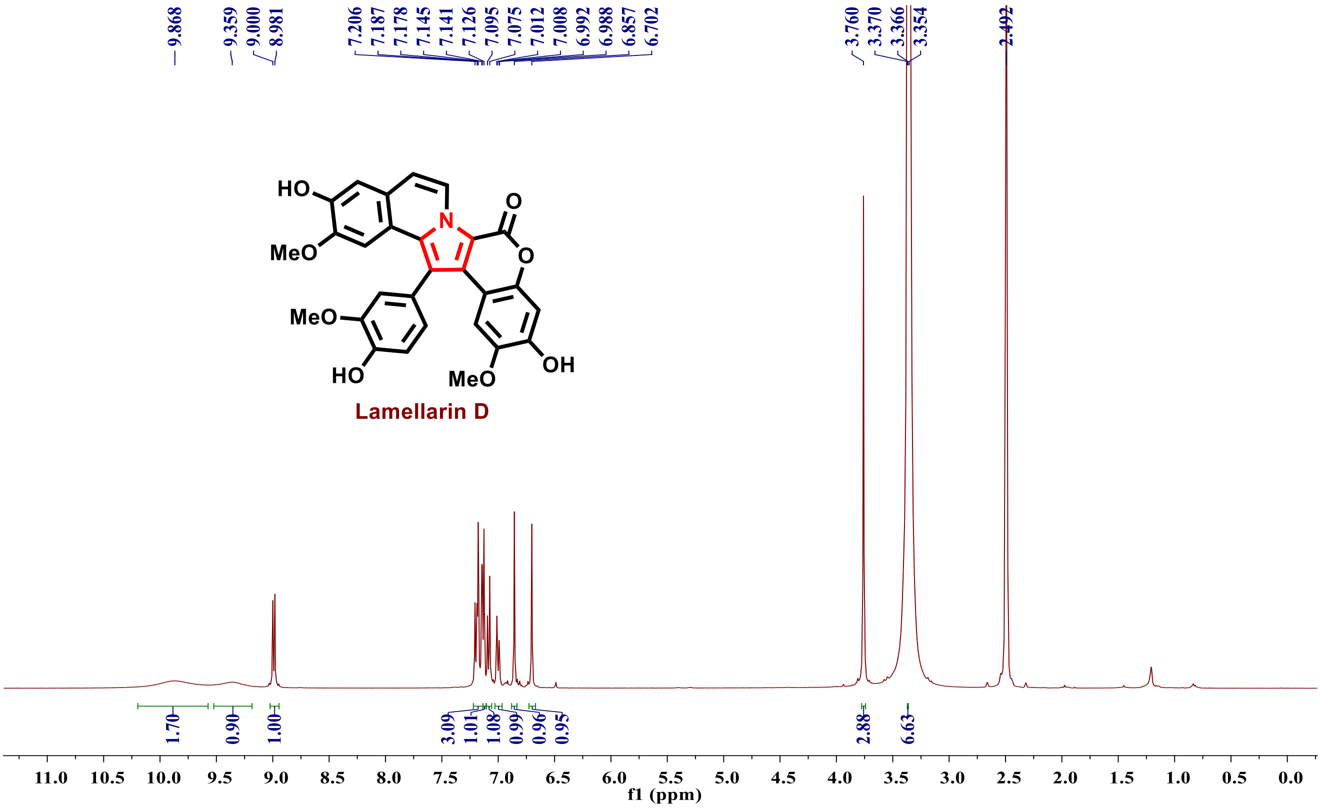
128.262
126.409
123.448
120.211
116.923
114.874
114.654
114.619
113.701
110.415
109.188
104.883
103.491
77.369
77.051
76.734
71.799
71.446
71.364
56.174
55.468
55.144
42.473
28.657
22.067
21.945
21.896
21.835
iPrO
MeO
N
O
O
MeO
iPrO
MeO
OiPr
20
f1 (ppm)



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9.359
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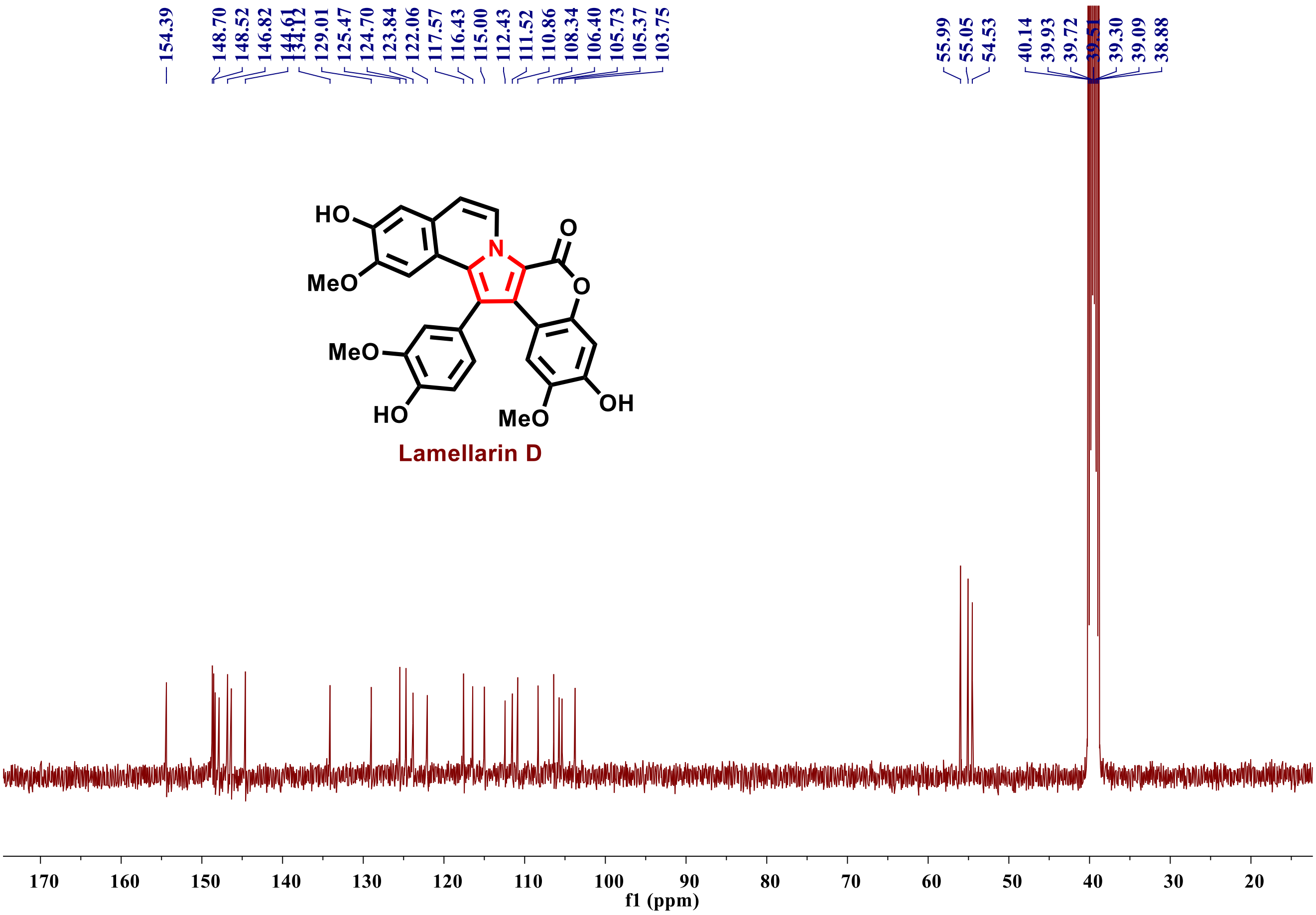
7.187
7.178
7.145
7.141
7.126
7.095
7.075
7.012
7.008
6.992
6.988
6.857
6.702
3.760
3.370
3.366
3.354
2.492
HO
MeO
N
O
O
MeO
HO
MeO
OH
Lamellarin D
1.70
0.90
1.00
3.09
1.01
1.08
0.99
0.96
0.95
2.88
6.63
f1 (ppm)


154.39
148.70
148.52
146.82
144.61
144.12
129.01
125.47
124.70
123.84
122.06
117.57
116.43
115.00
112.43
111.52
110.86
108.34
106.40
105.73
105.37
103.75
55.99
55.05
54.53
40.14
39.93
39.72
39.51
39.30
39.09
38.88
HO
MeO
N
O
O
MeO
HO
MeO
OH
Lamellarin D
f1 (ppm)

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5) Q. Li, J. Jiang, A. Fan, Y. Cui, Y. Jia, *Org. Lett.* **2011**, *13*, 312−315.