Supplementary Electronic Informations for

Mechanistic insights of the copper(I)-catalysed reaction between chlorohydrazones and terminal alkynes

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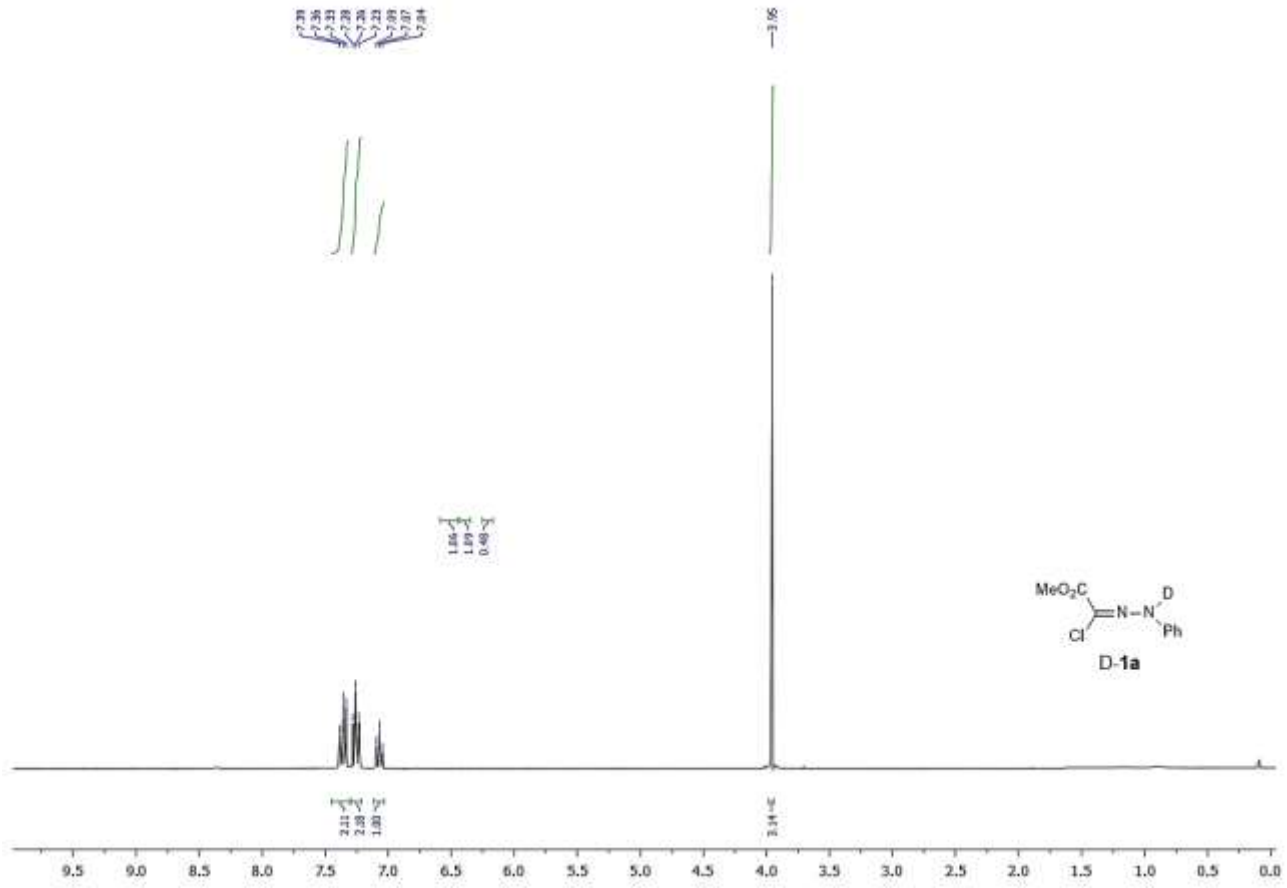
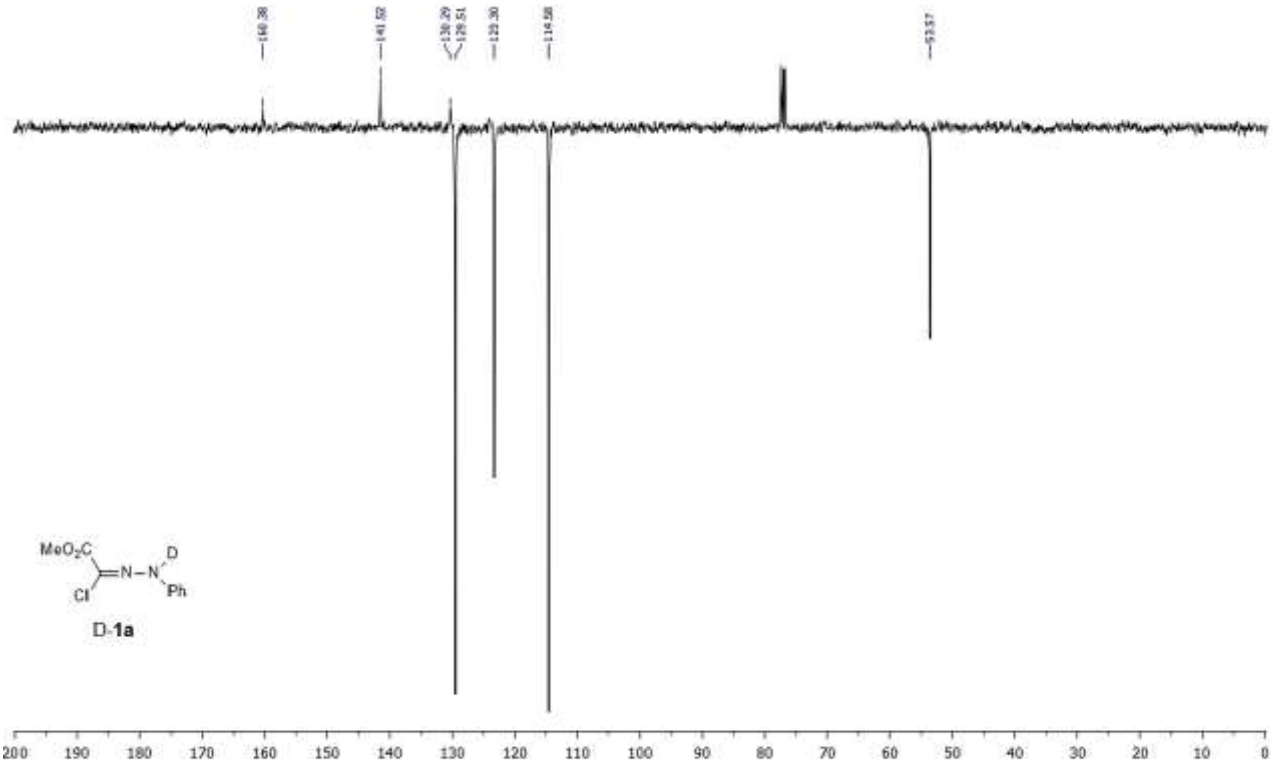
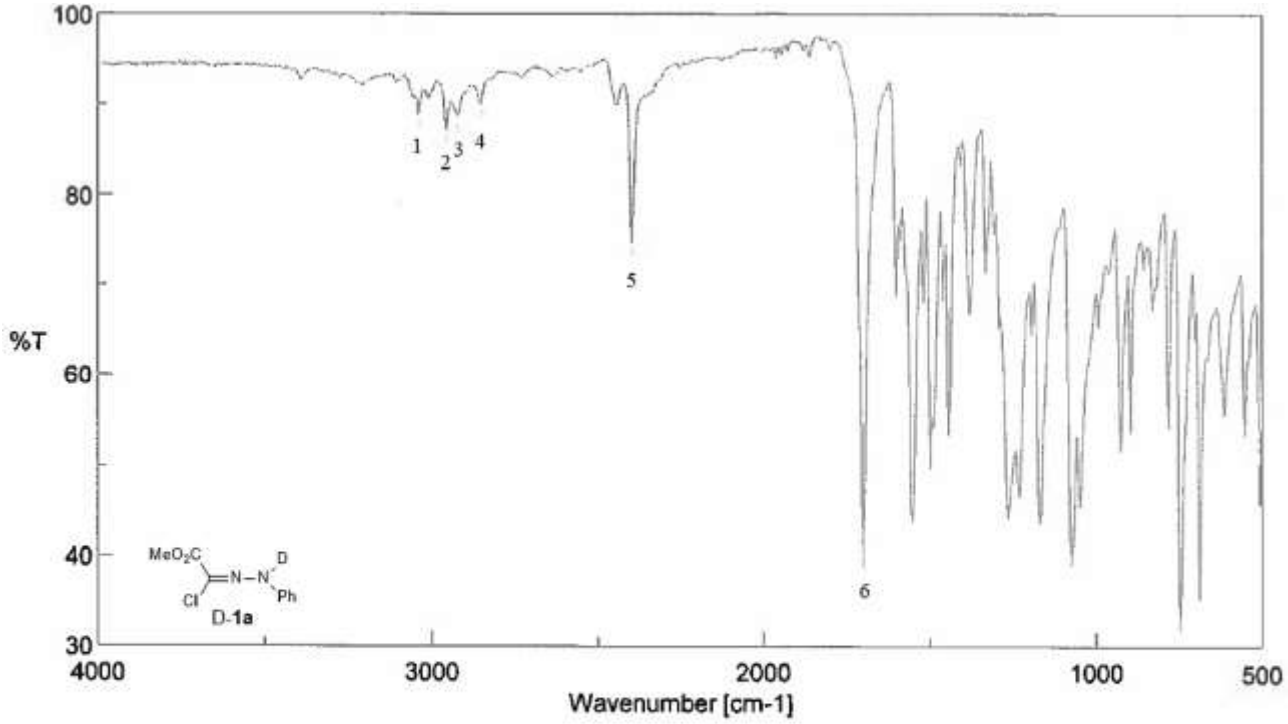
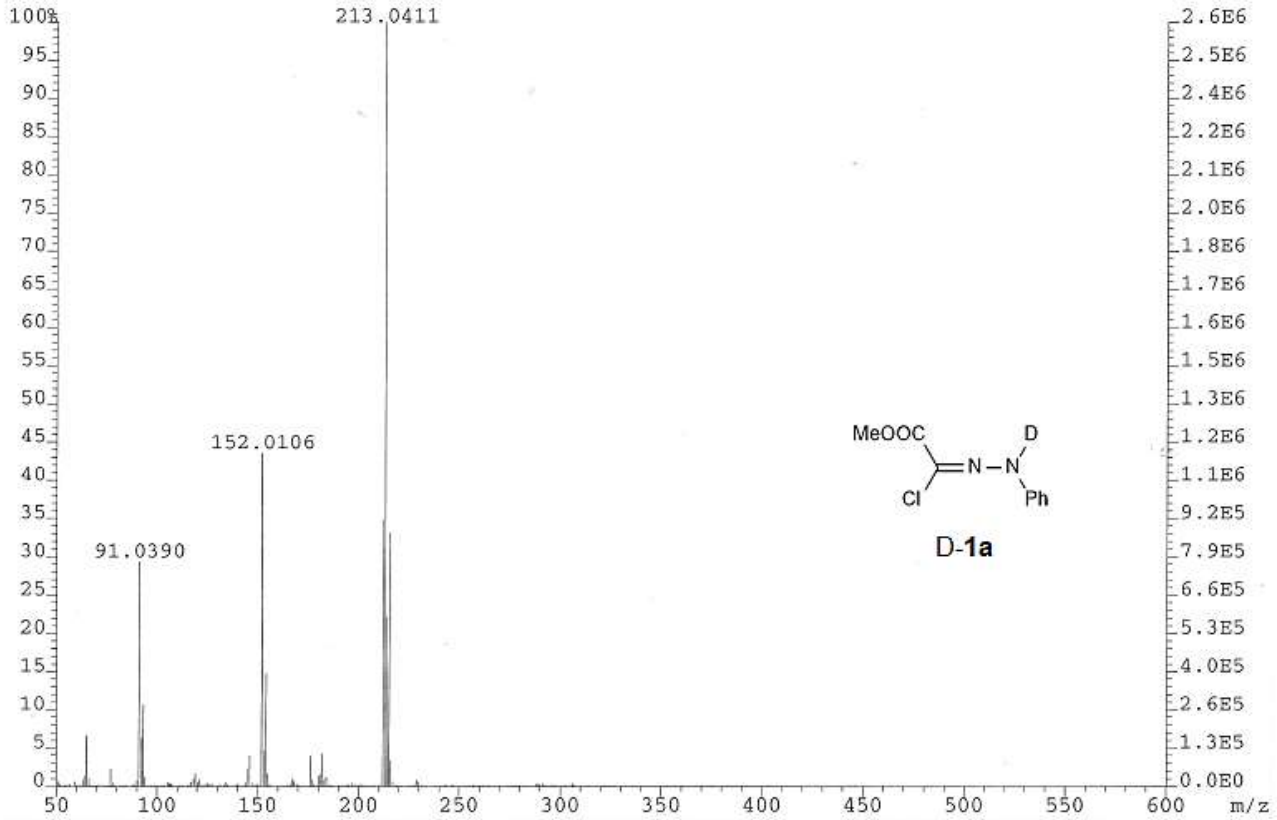
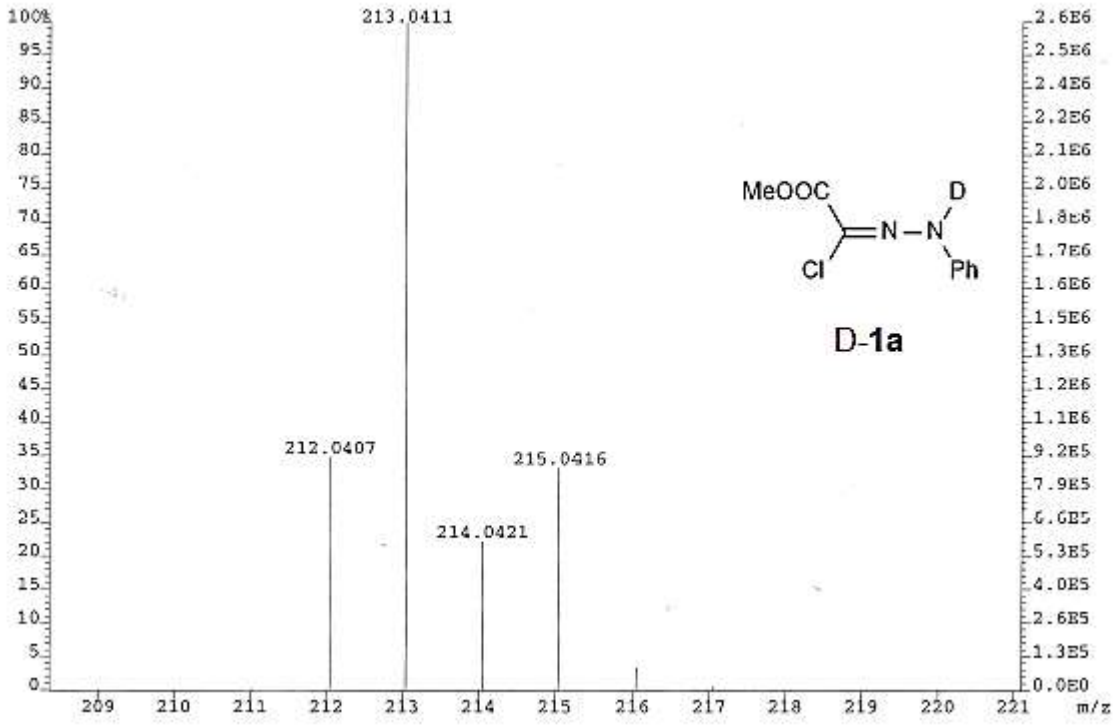

MeO2C
Cl
N
N
D
Ph
D-1a


MeO2C
Cl
N
N
D
Ph
D-1a

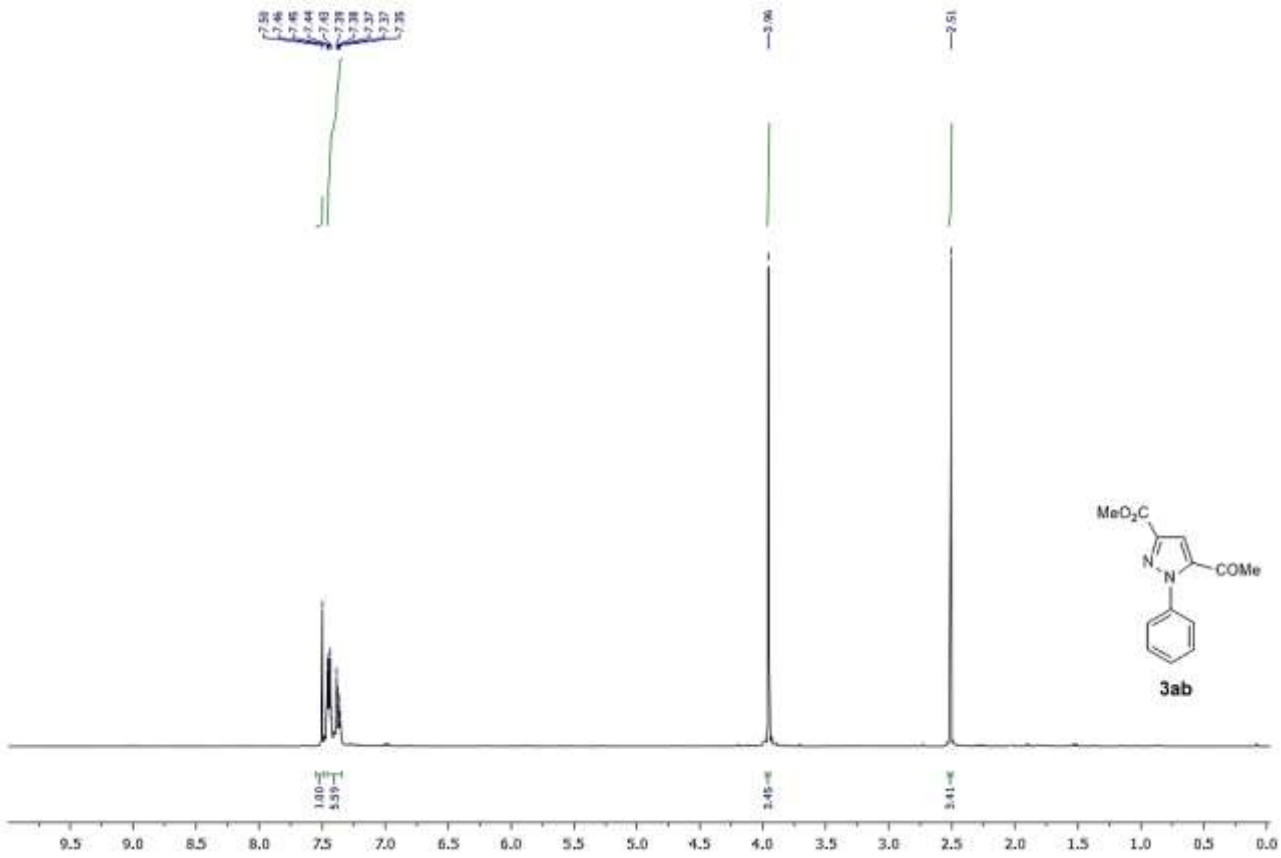


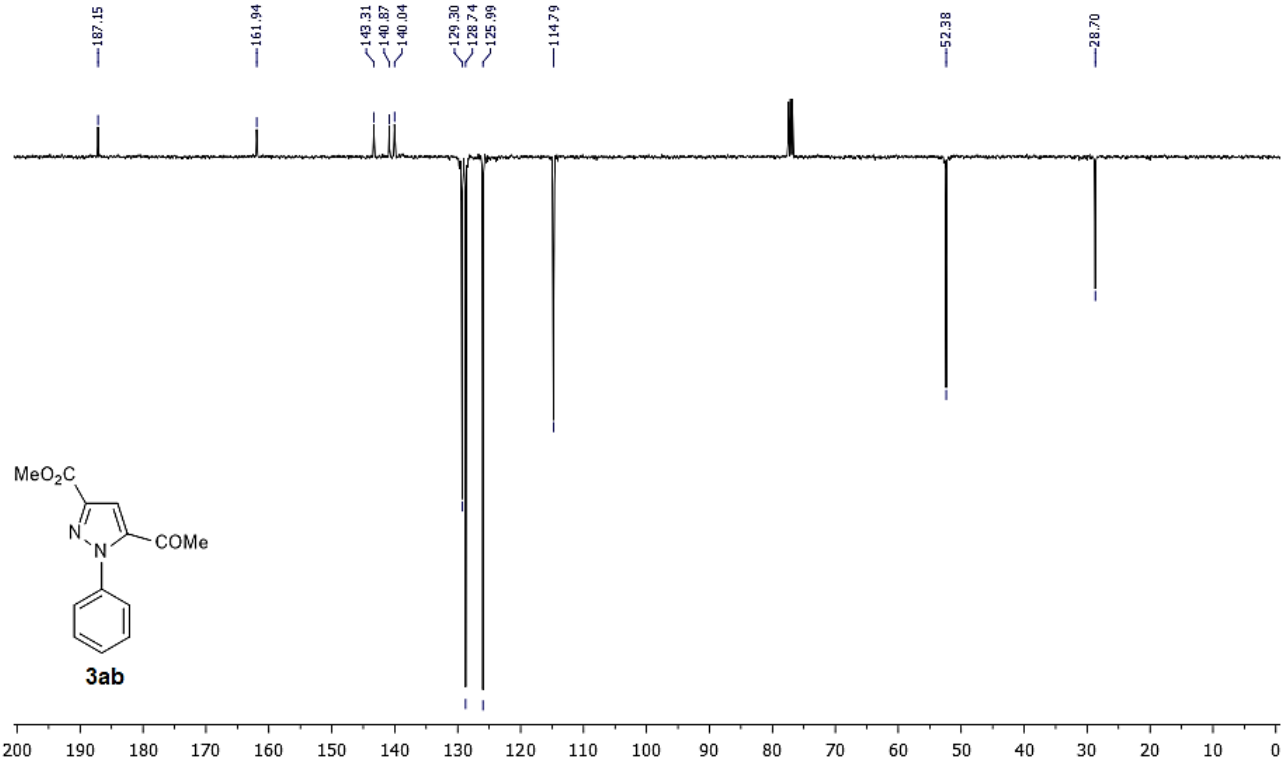
No.	Position	Intensity	No.	Position	Intensity	No.	Position	Intensity
1	3040.23	88.8881	2	2955.38	87.0843	3	2921.63	88.6055
4	2851.24	89.9954	5	2397.08	74.6103	6	1698.98	40.0705
7	1600.63	68.6299						

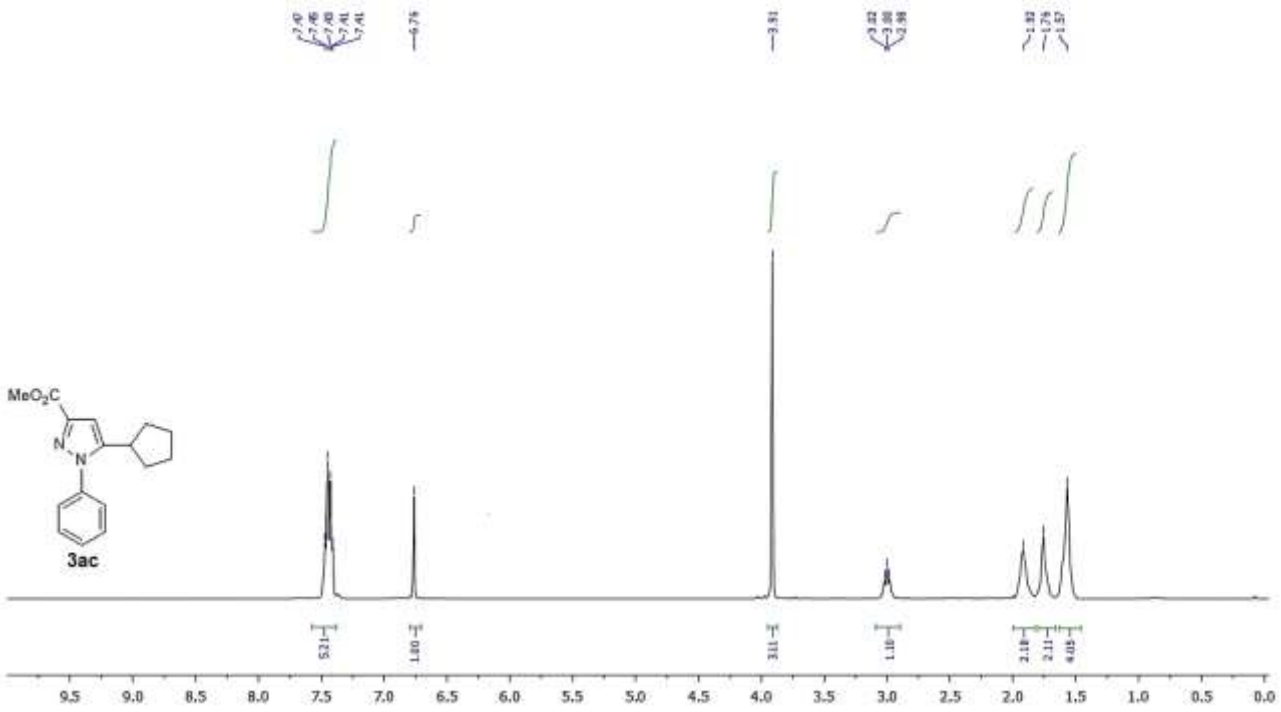


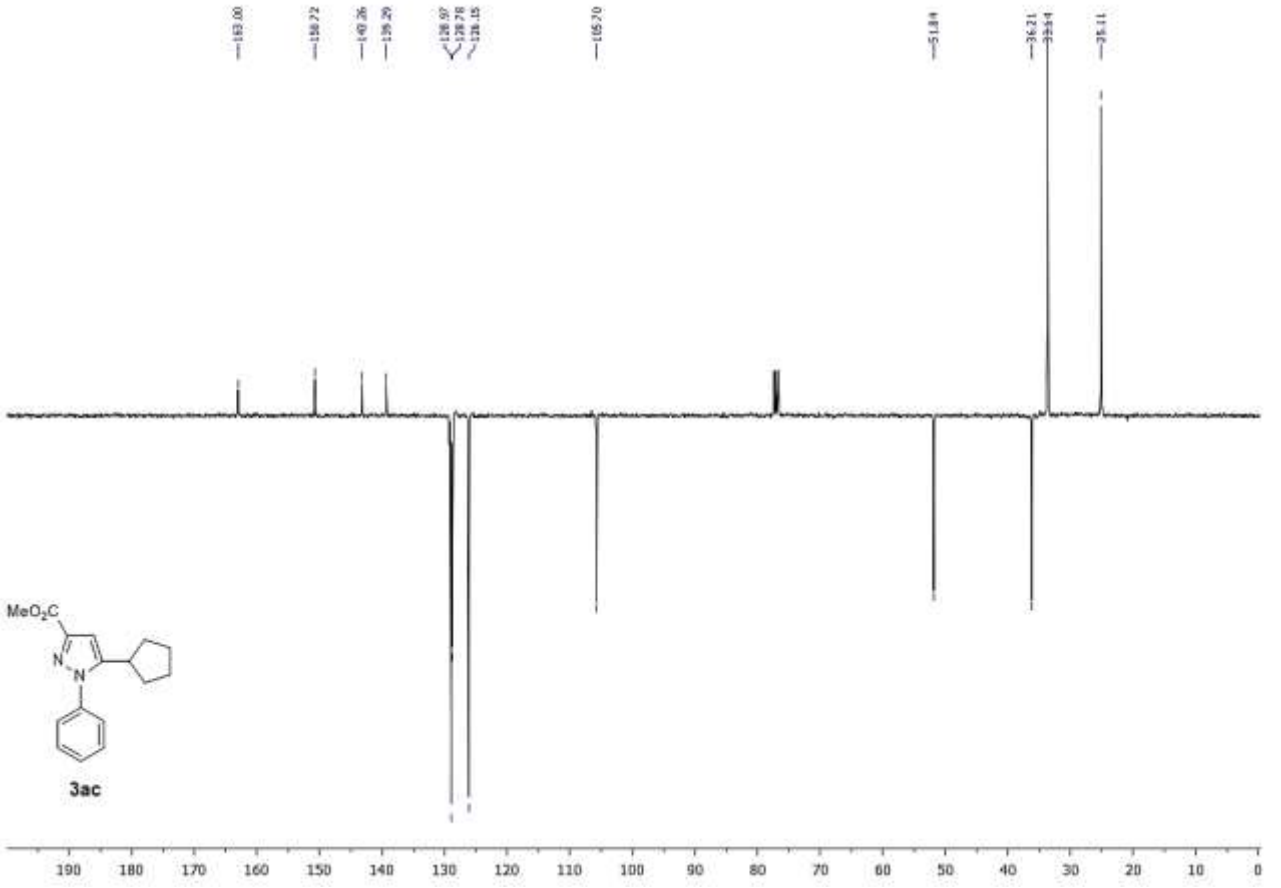


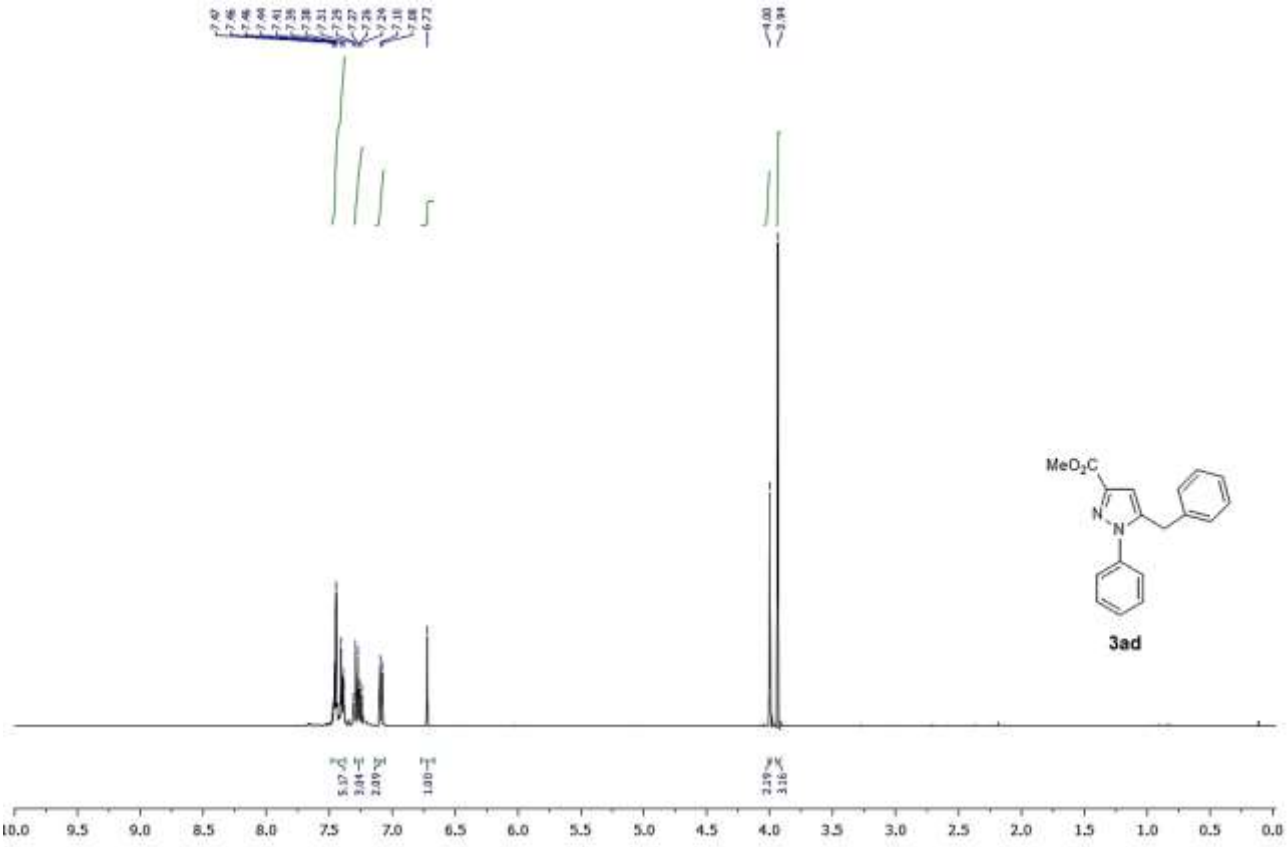
Anal. Calcd for $C_8H_8DClN_2O_2$: C, 50.60; H, 4.72; N, 13.11. Found: C, 50.58; H, 4.70; N, 13.18.

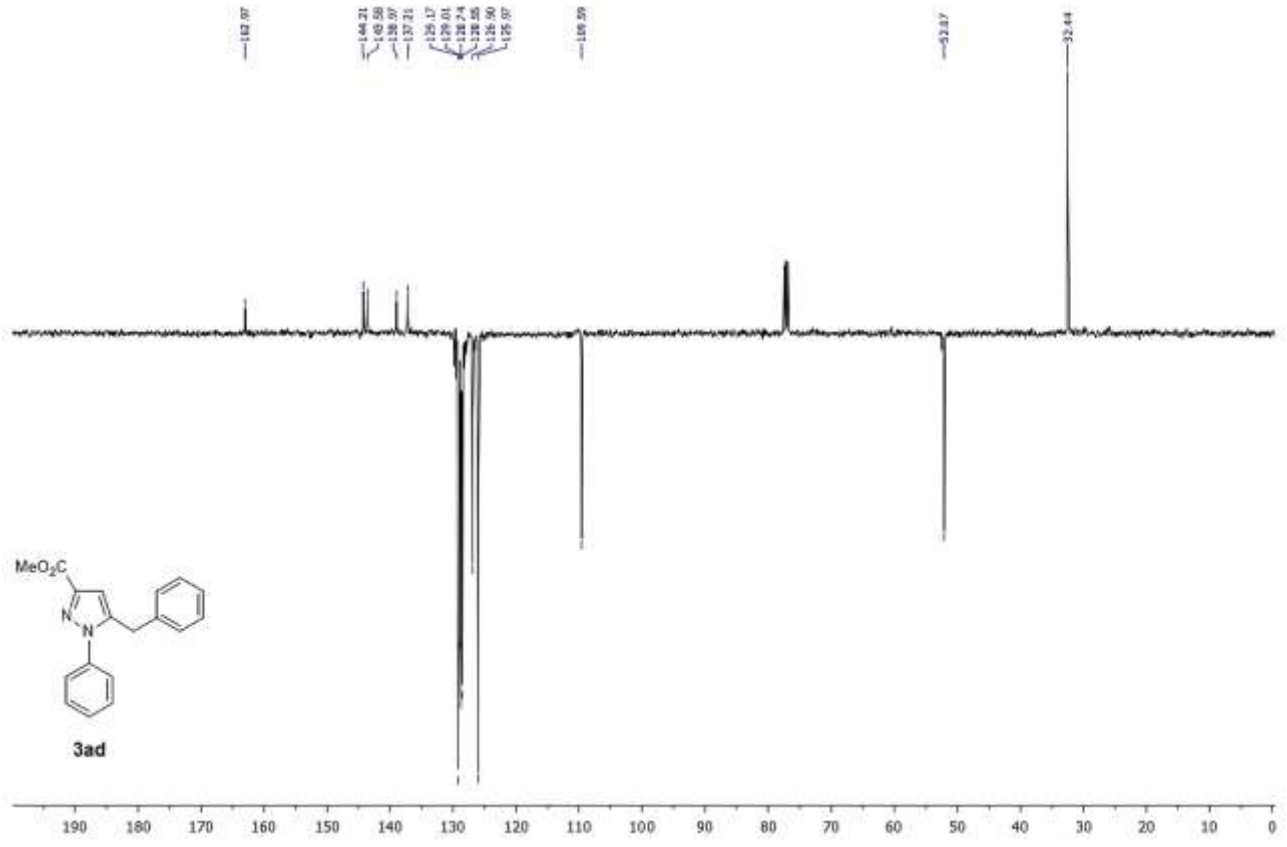

7.58
7.46
7.44
7.43
7.40
7.38
7.37
7.37
7.35
3.96
2.51
MeO2C
N
N
COMe
3ab
1.00
5.59
3.45
3.41
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0

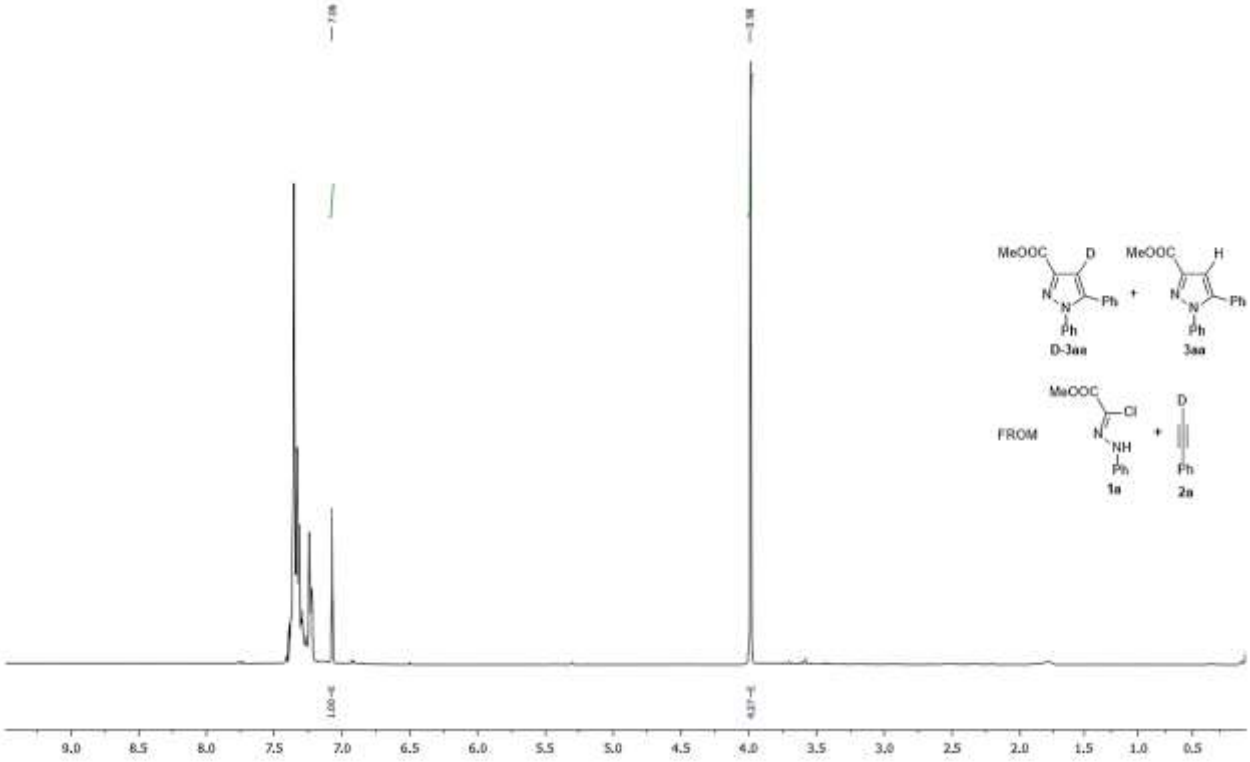

187.15
161.94
143.31
140.87
140.04
129.30
128.74
125.99
114.79
52.38
28.70
MeO2C
N
N
COMe
3ab
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

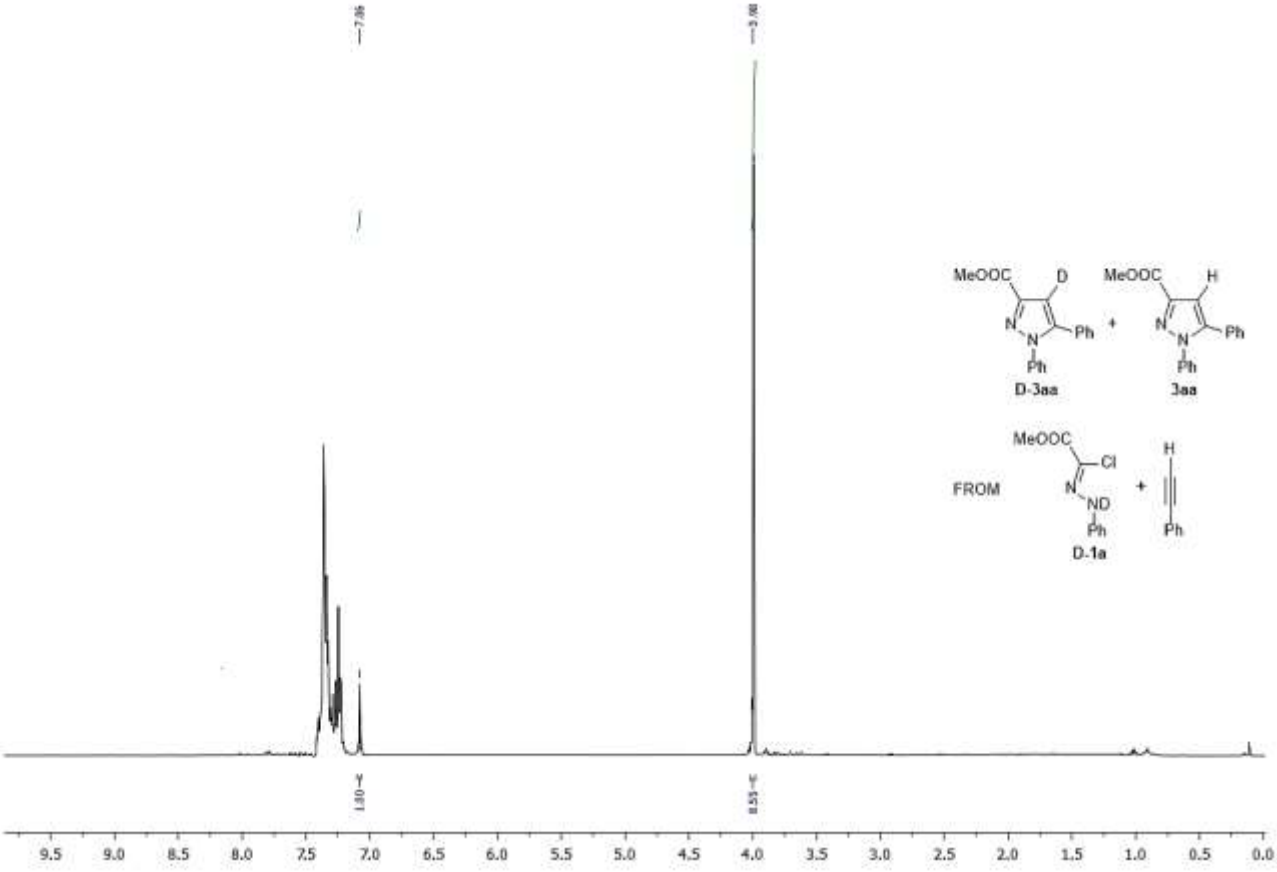

MeO2C
3ac

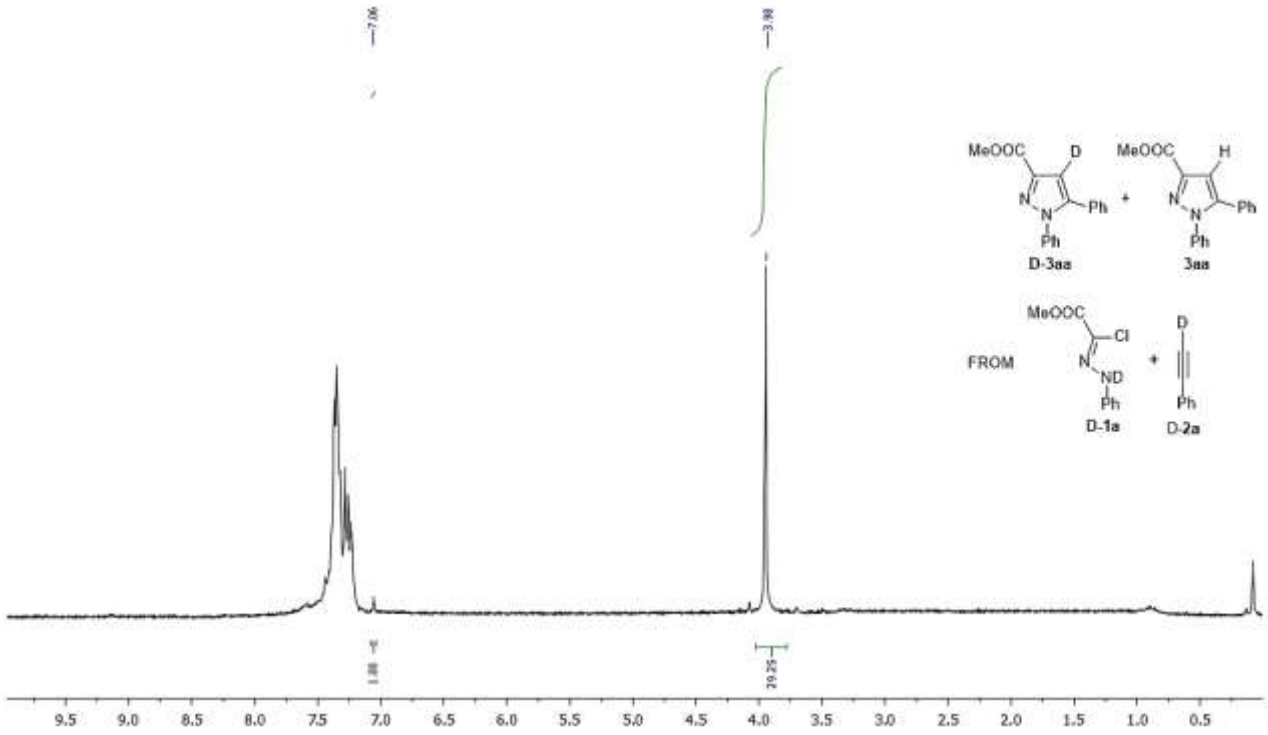

MeO2C
3ac

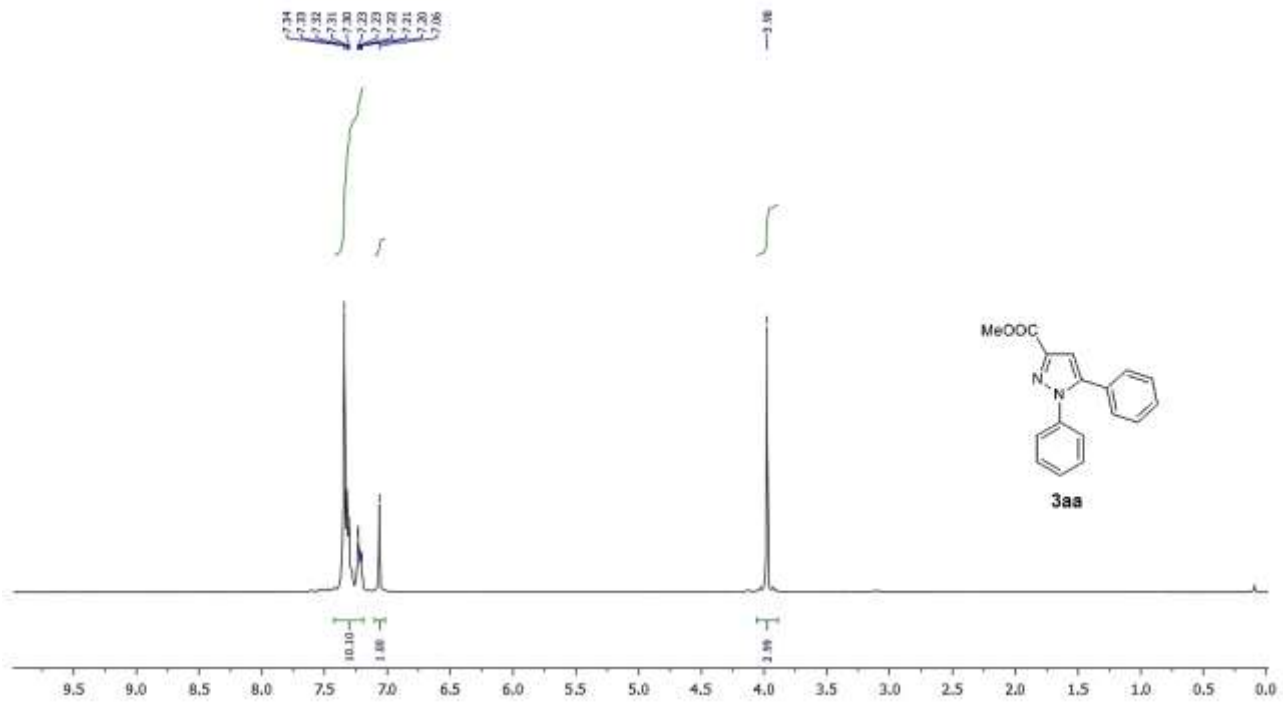

MeO2C
3ad

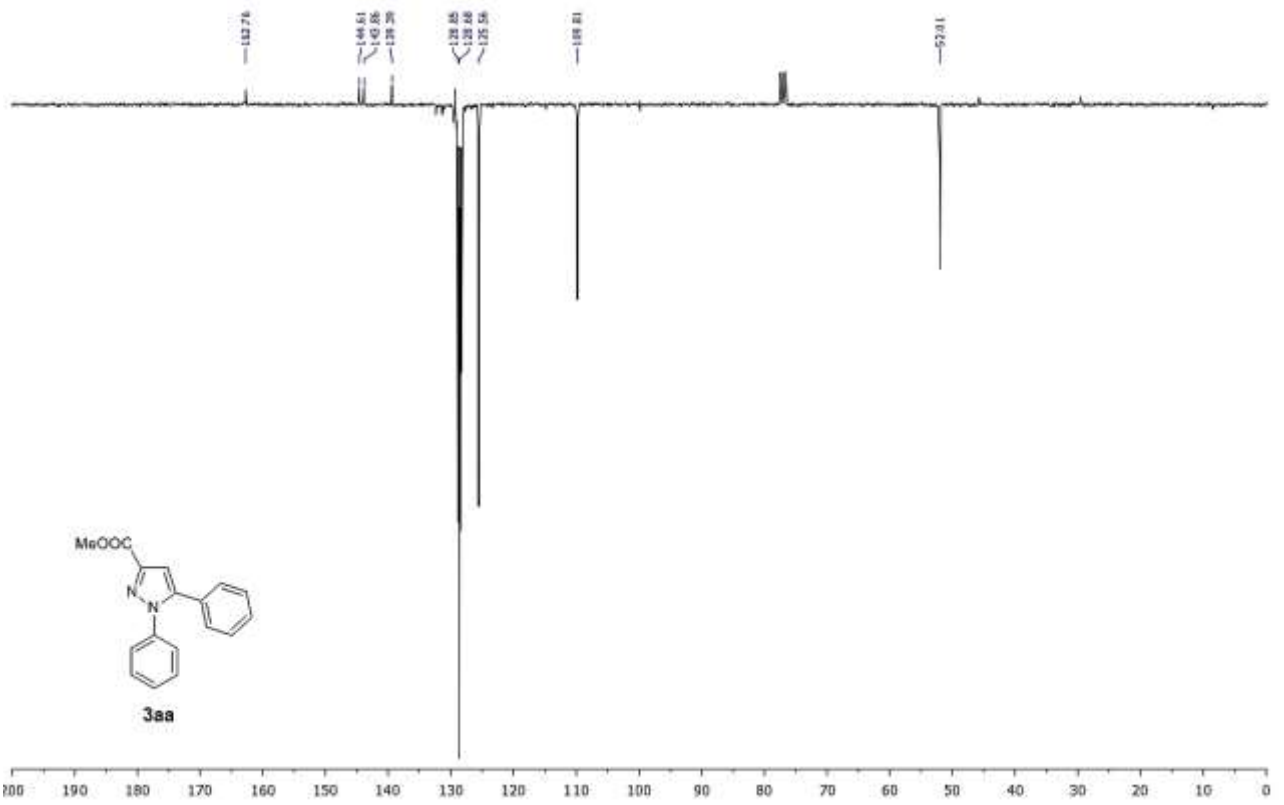

MeO2C
3ad

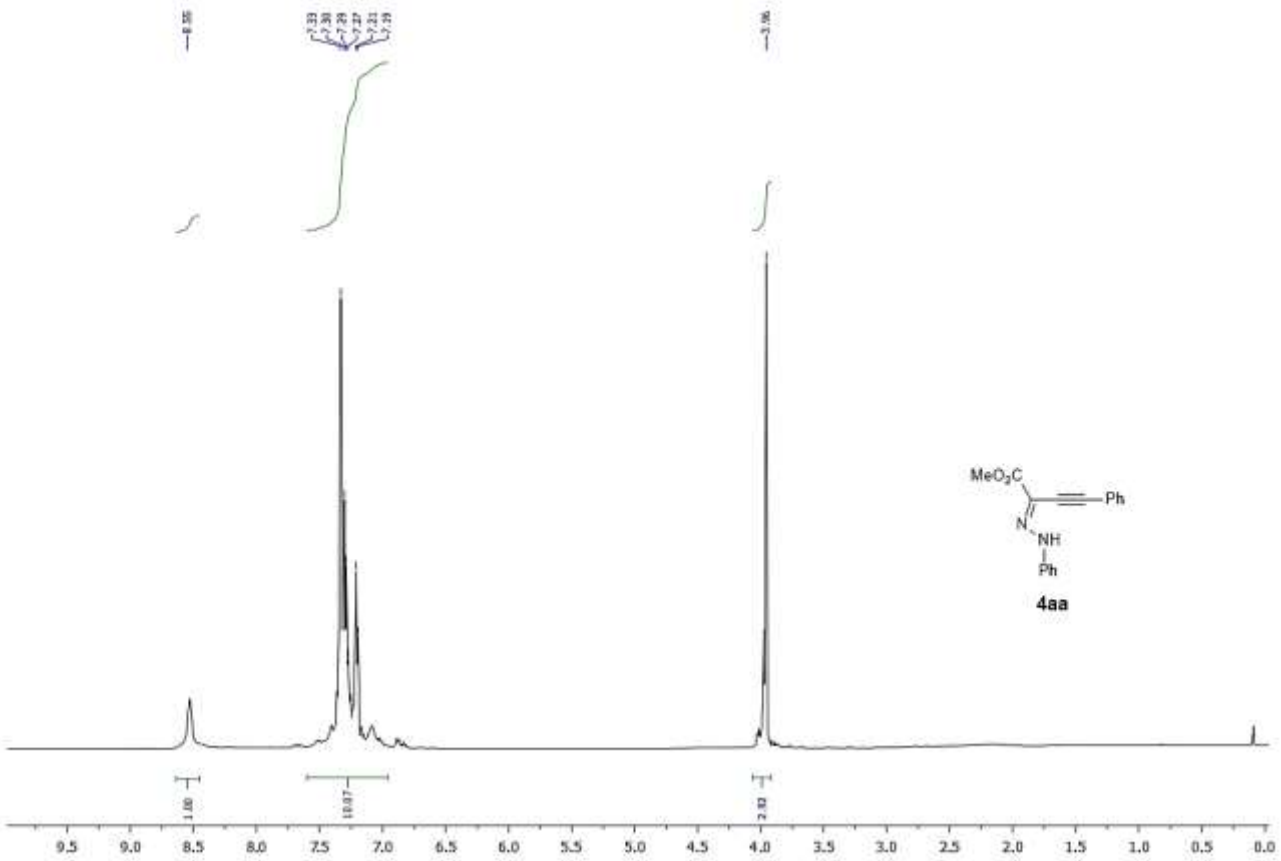

MeOOC
D
Ph
N
N
Ph
D-3aa
+
MeOOC
H
Ph
N
N
Ph
3aa
FROM
MeOOC
Cl
N
NH
Ph
1a
+
D
Ph
2a

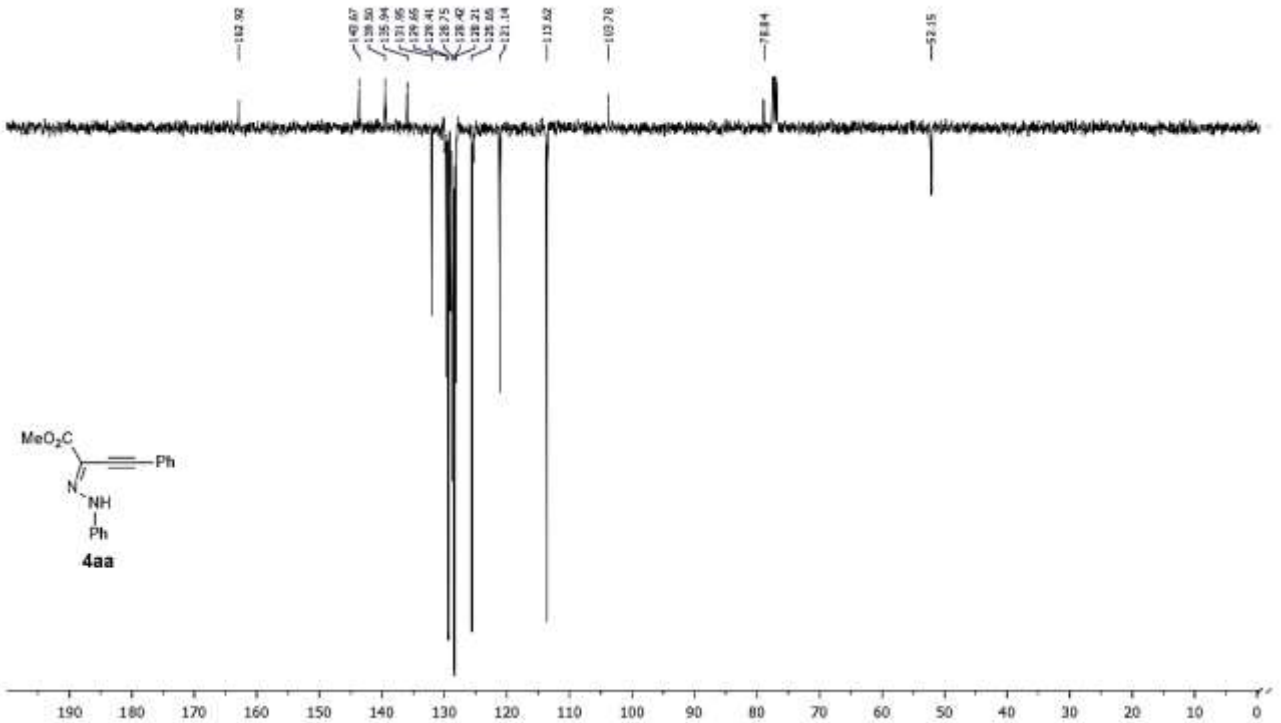

MeOOC
D
Ph
N
N
Ph
D-3aa
+
MeOOC
H
Ph
N
N
Ph
3aa
FROM
MeOOC
Cl
N
ND
Ph
D-1a
+
H
Ph

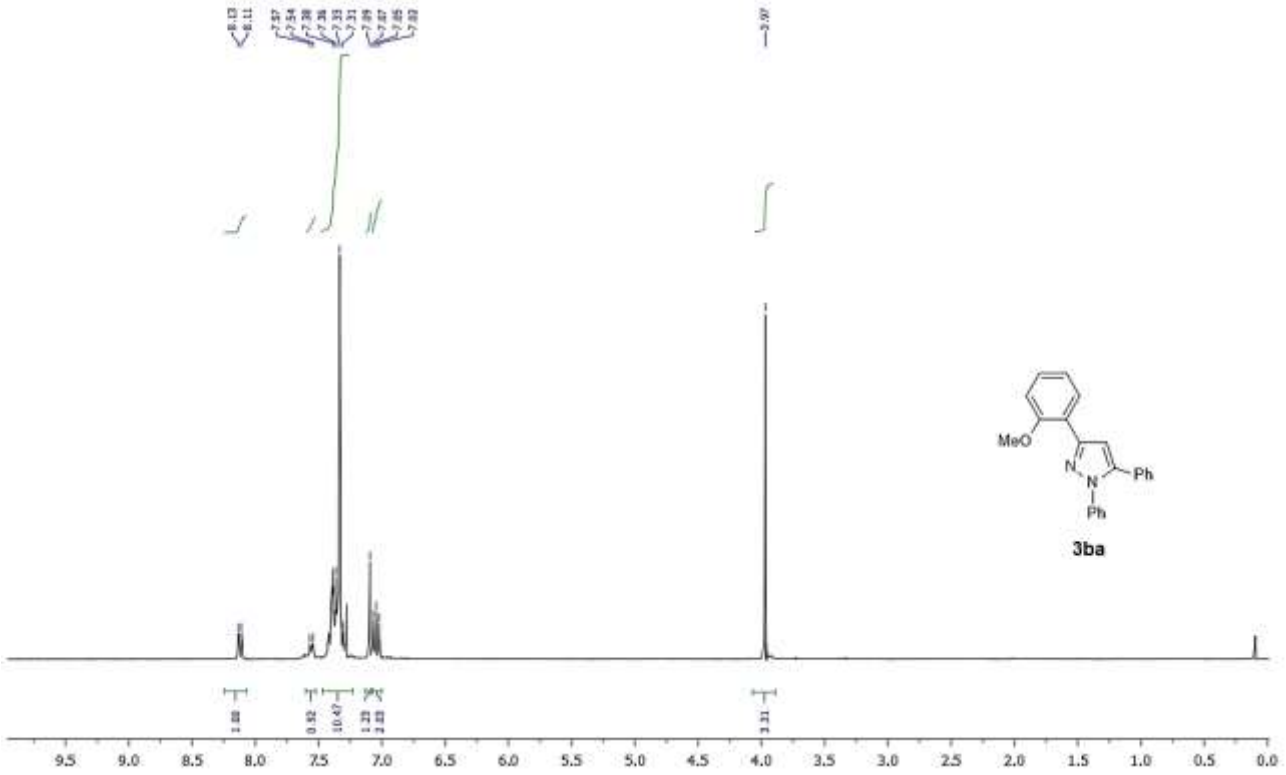

7.06
3.98
MeOOC
D
Ph
Ph
D-3aa
MeOOC
H
Ph
Ph
3aa
FROM
MeOOC
Cl
N
ND
Ph
D-1a
D
Ph
D-2a
1.88
29.25
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5

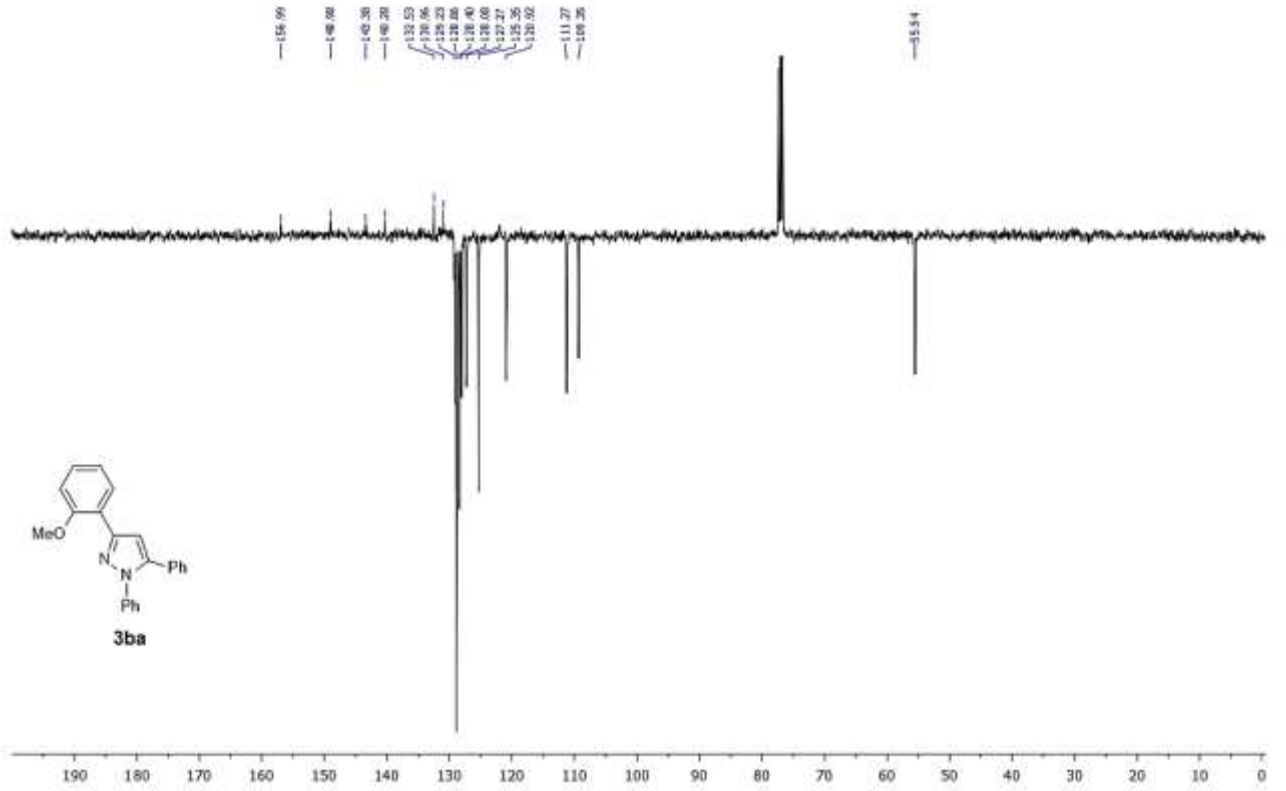

MeOOC
N
N
3aa

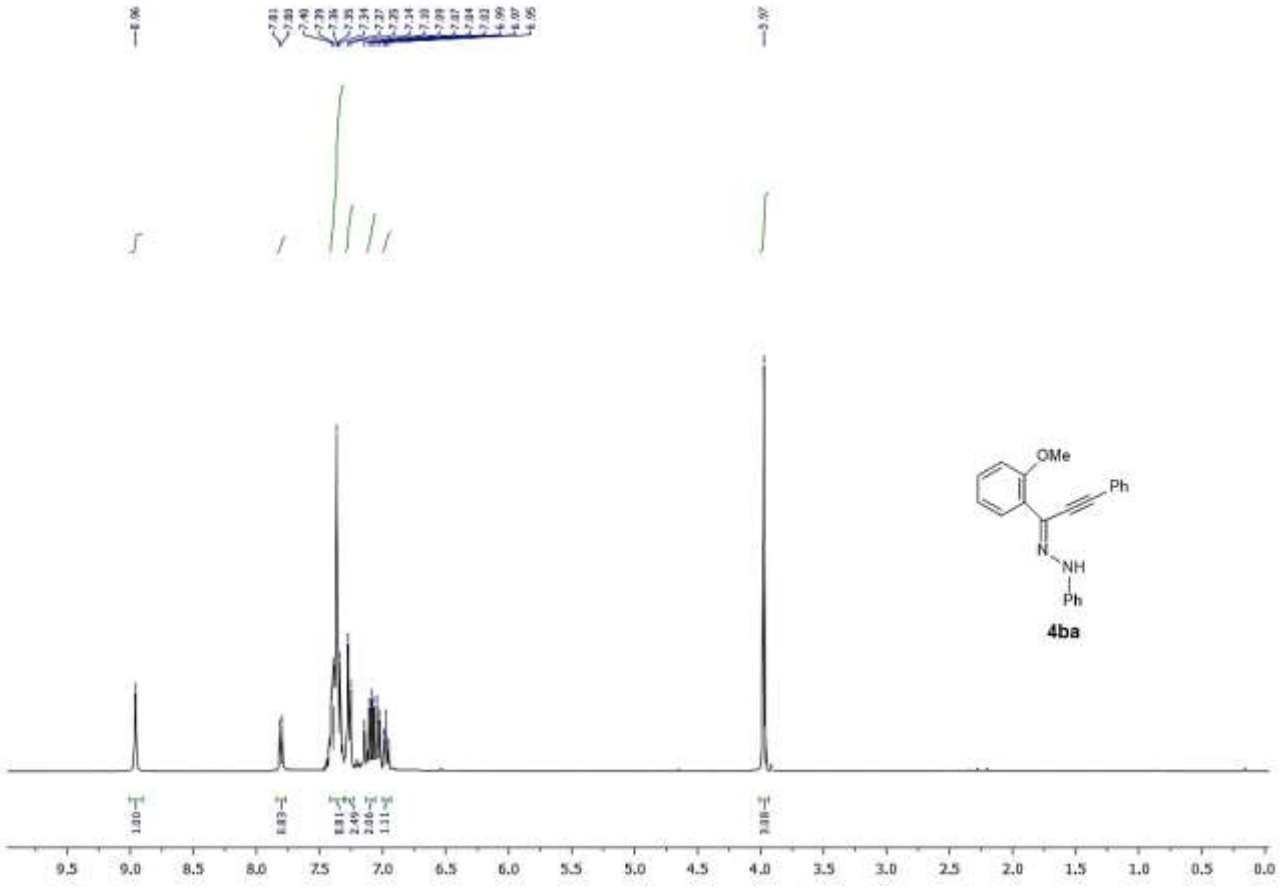

MeOOC
N
N
3aa

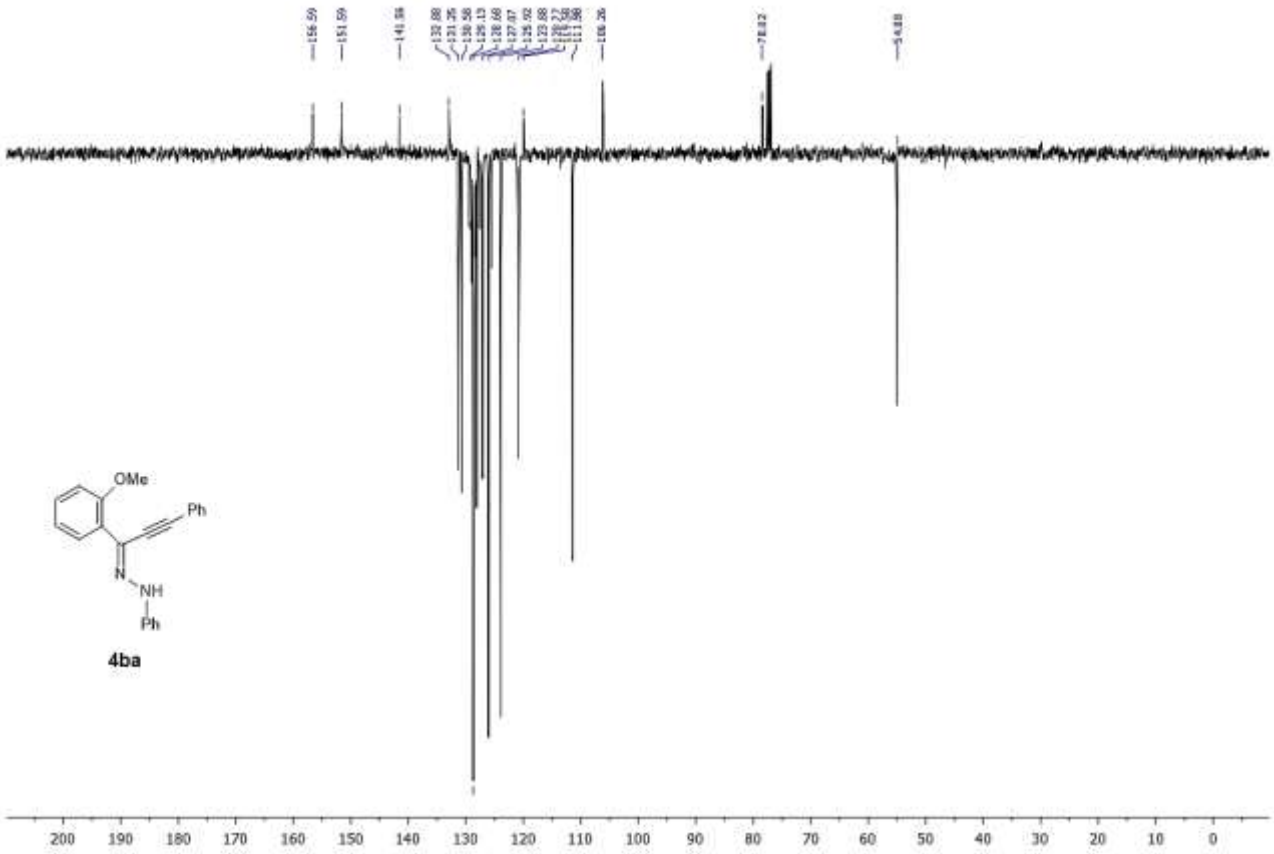

MeO2C
Ph
N
NH
Ph
4aa

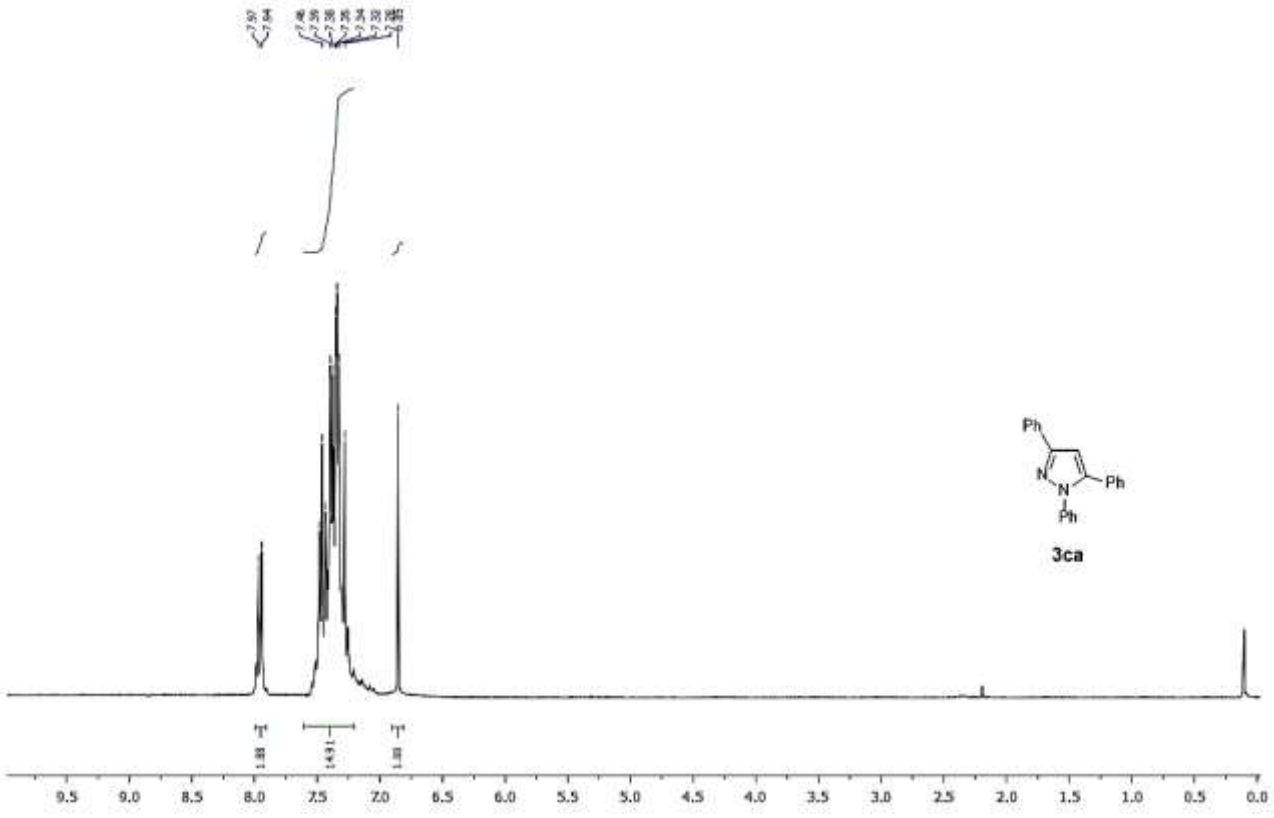

MeO2C
Ph
N
NH
Ph
4aa

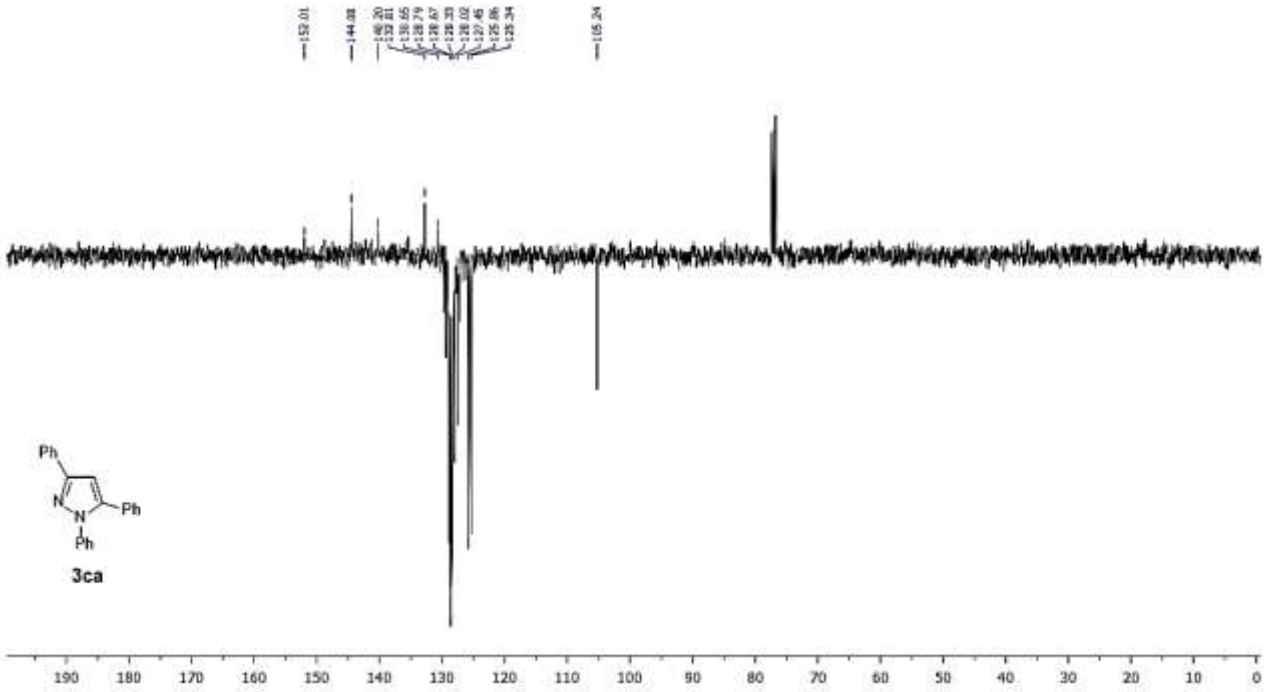

MeO
N
N
Ph
Ph
3ba


MeO
N
N
Ph
Ph
3ba


OMe
Ph
N
NH
Ph
4ba


OMe
Ph
N
NH
Ph
4ba
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0


Ph
N
N
Ph
Ph
3ca
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 0.0


152.01
144.38
140.20
140.01
139.65
138.79
128.67
128.33
128.02
127.45
125.86
125.34
105.24
Ph
Ph
Ph
N
N
3ca
190
180
170
160
150
140
130
120
110
100
90
80
70
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50
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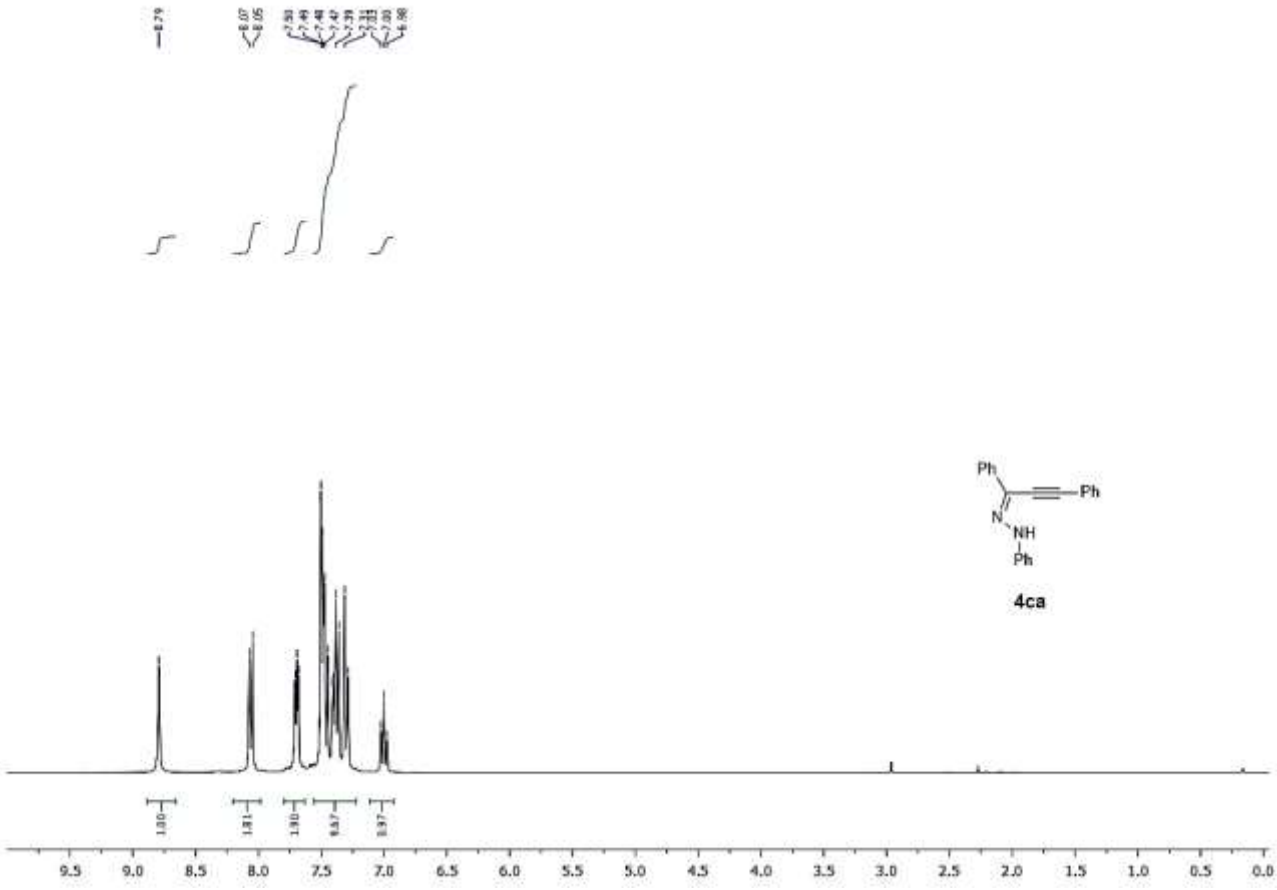
30
20
10
0


8.79
8.07
8.05
7.50
7.49
7.48
7.43
7.39
7.33
7.31
7.30
6.98
Ph
Ph
N
NH
Ph
4ca
1.00
1.31
1.90
8.37
3.97
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
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3.0
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2.0
1.5
1.0
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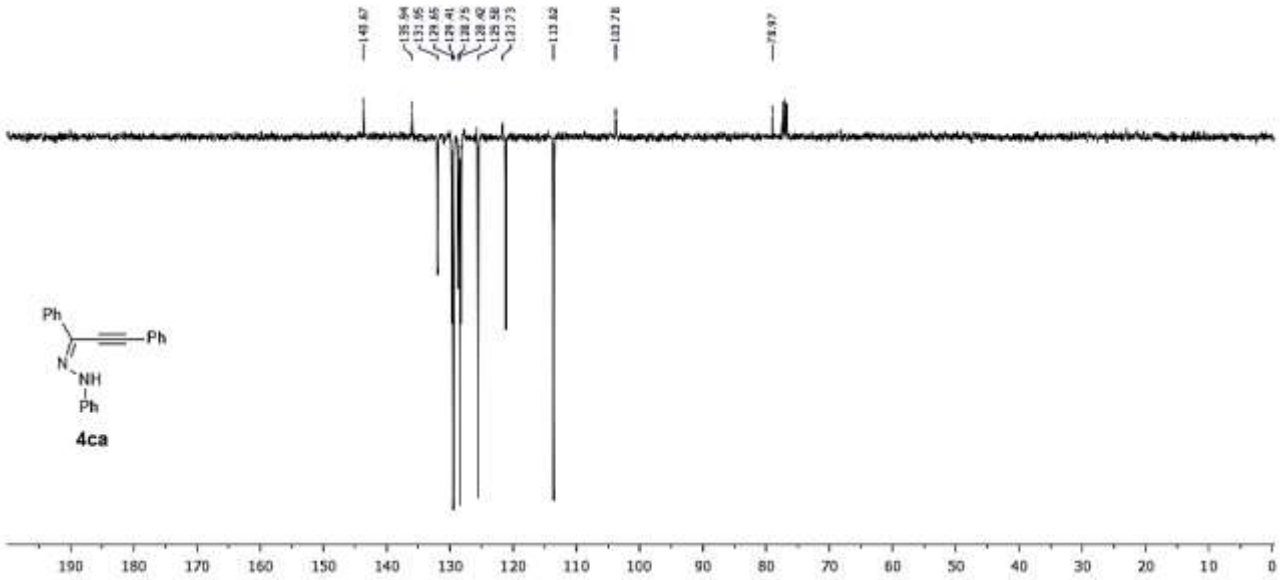
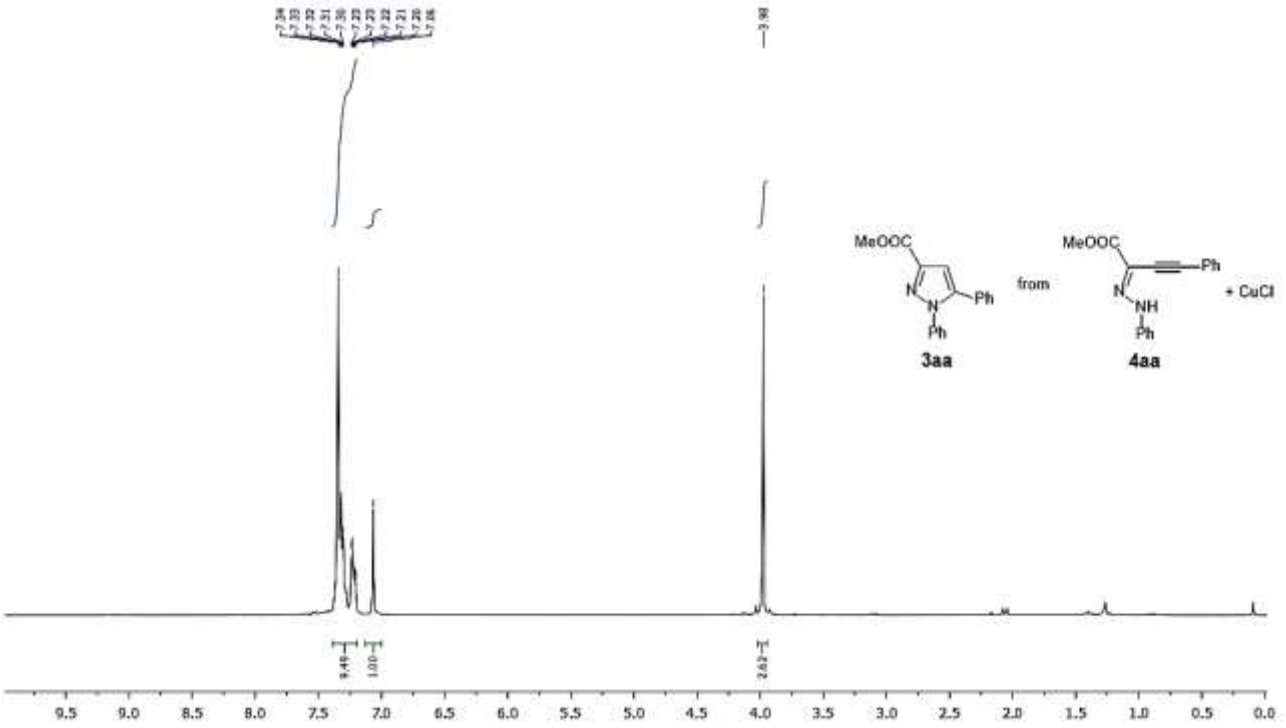
0.0


Ph
Ph
N
NH
Ph
4ca


MeOOC
Ph
N
N
Ph
3aa
from
MeOOC
Ph
N
NH
Ph
4aa
+ CuCl