Supporting Information

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^{1}H NMR and ^{13}C NMR Spectra

Stereoselective Decarboxylative Alkylation of Titanium(IV) Enolates with Diacyl Peroxides

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Contents

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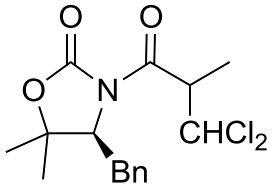

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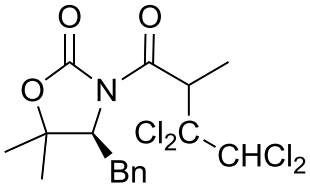

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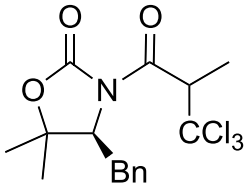

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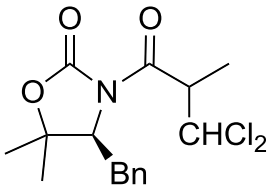

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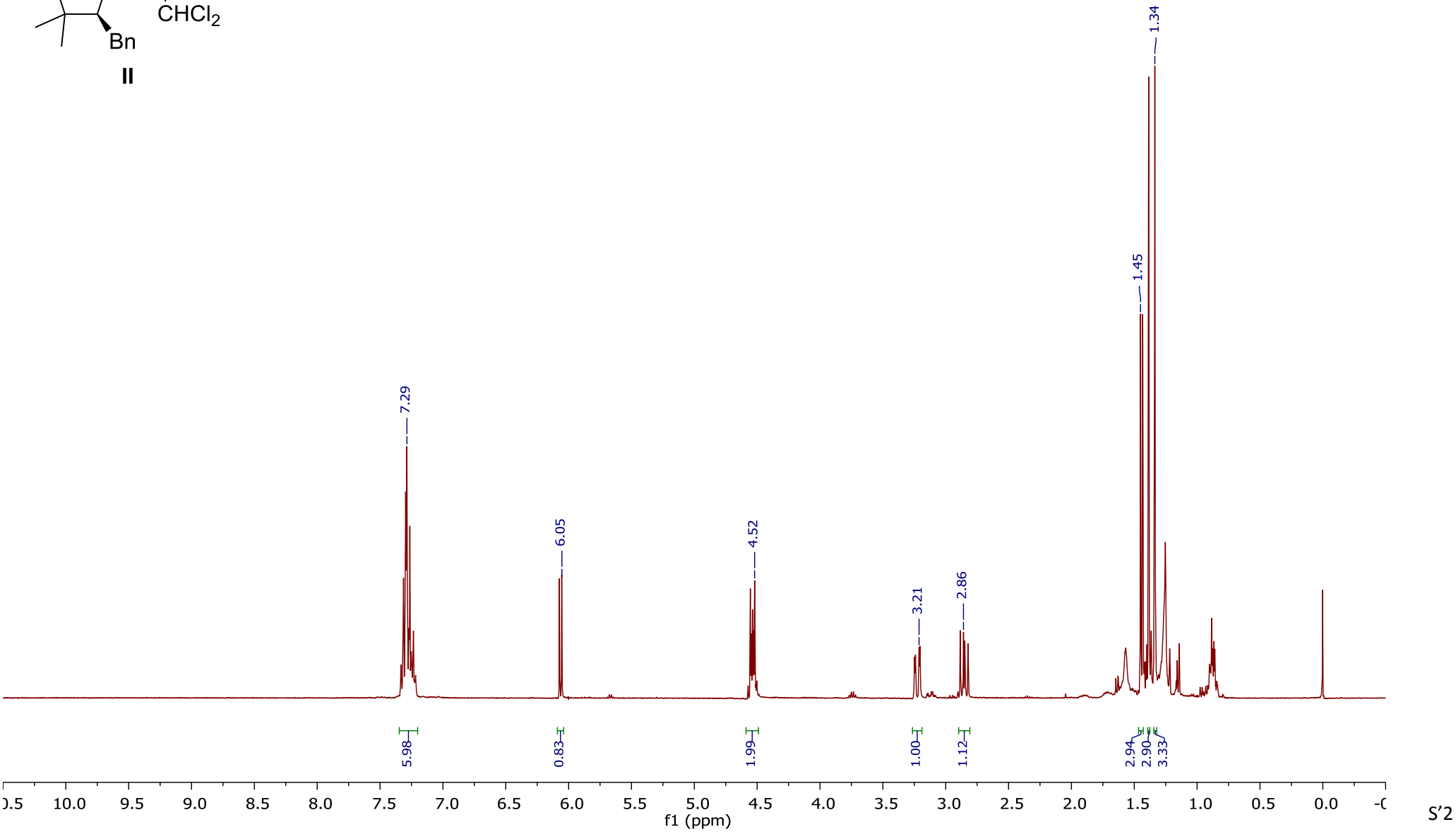

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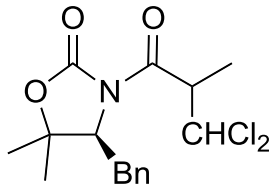

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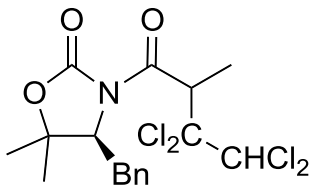

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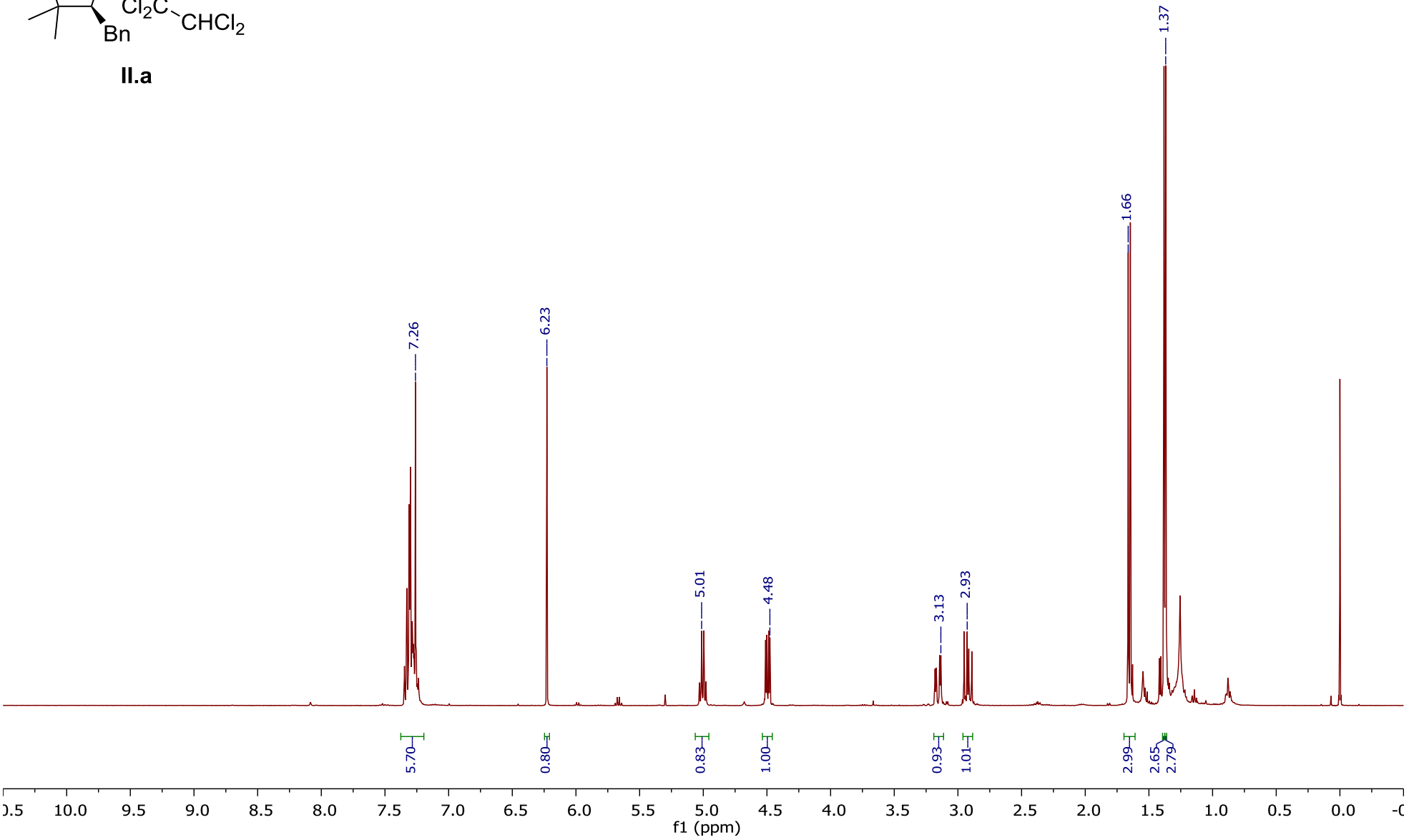

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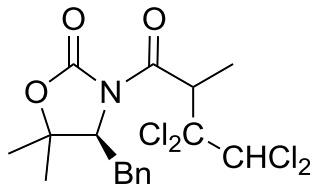

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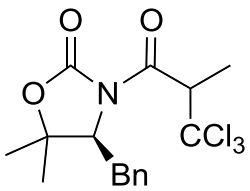

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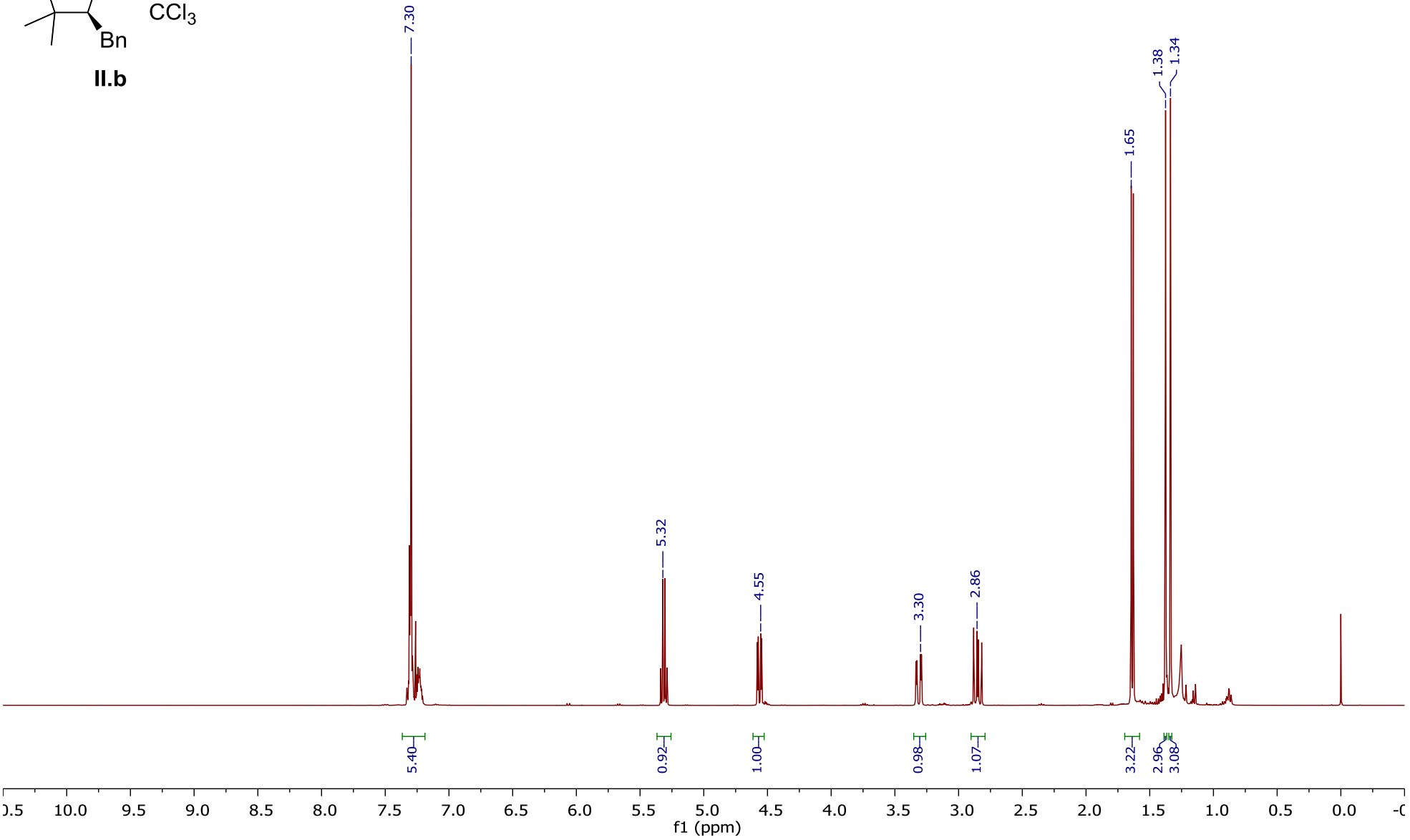

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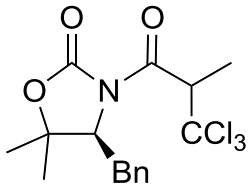

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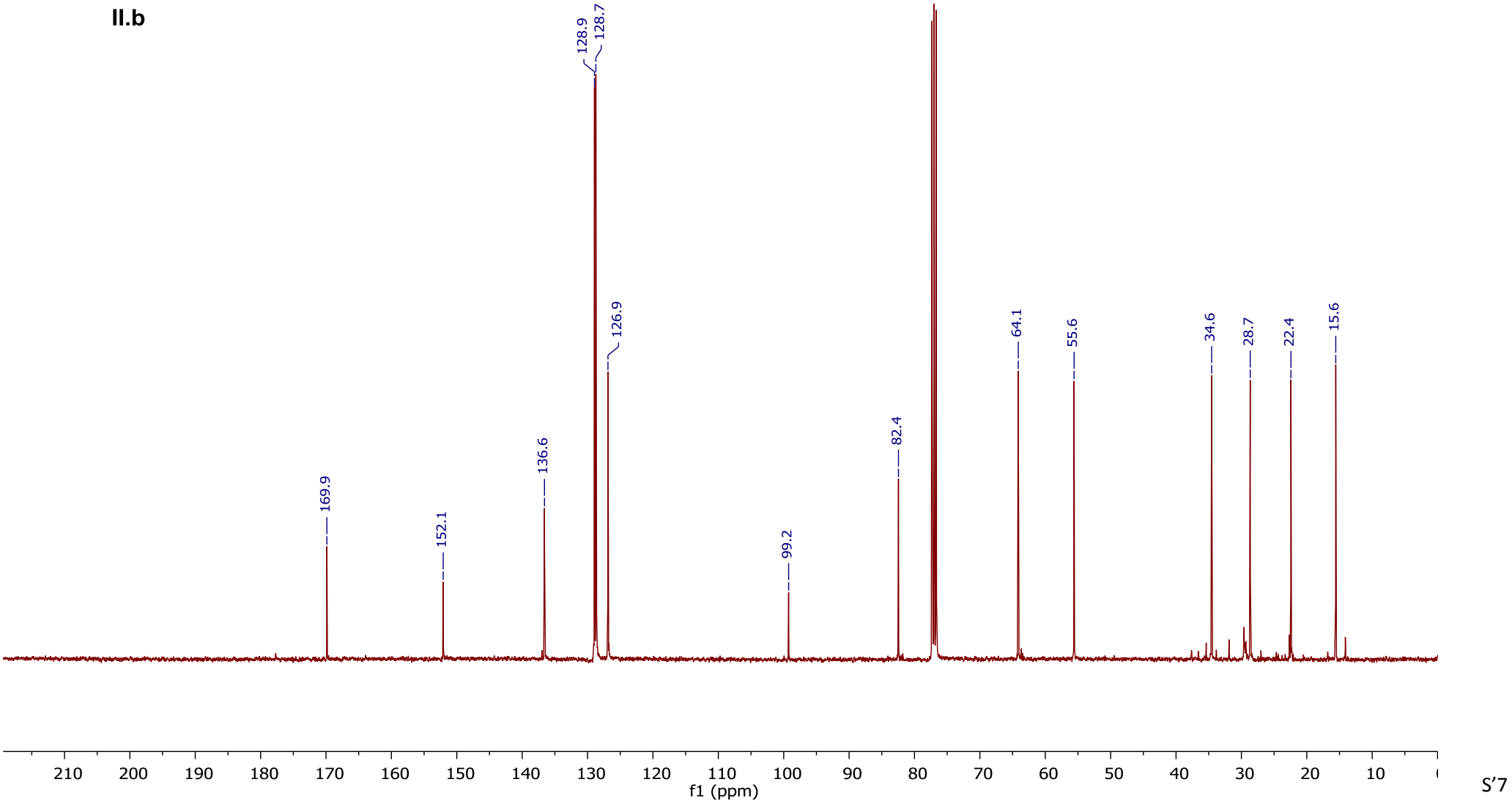

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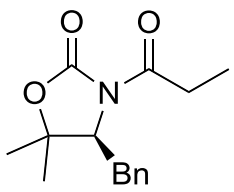

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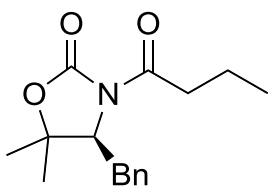

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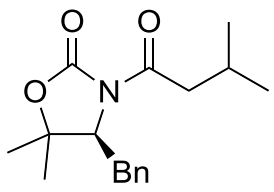

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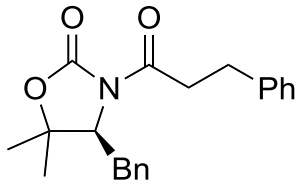

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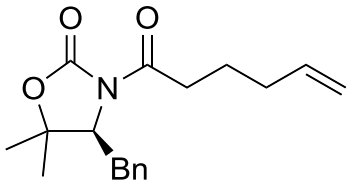

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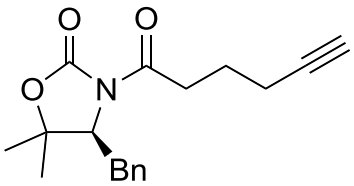

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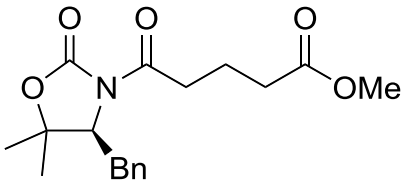

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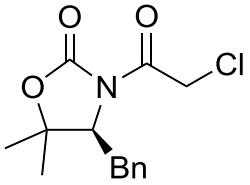

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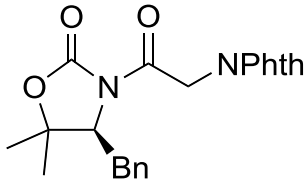

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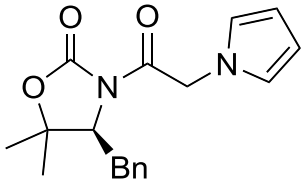

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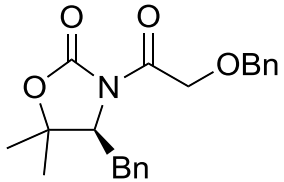

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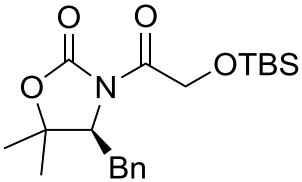

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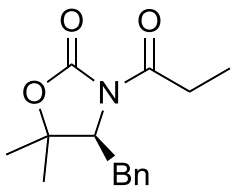

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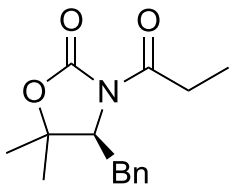

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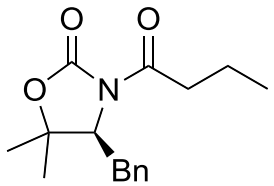

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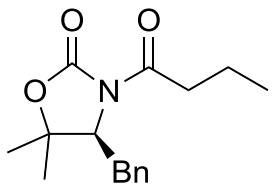

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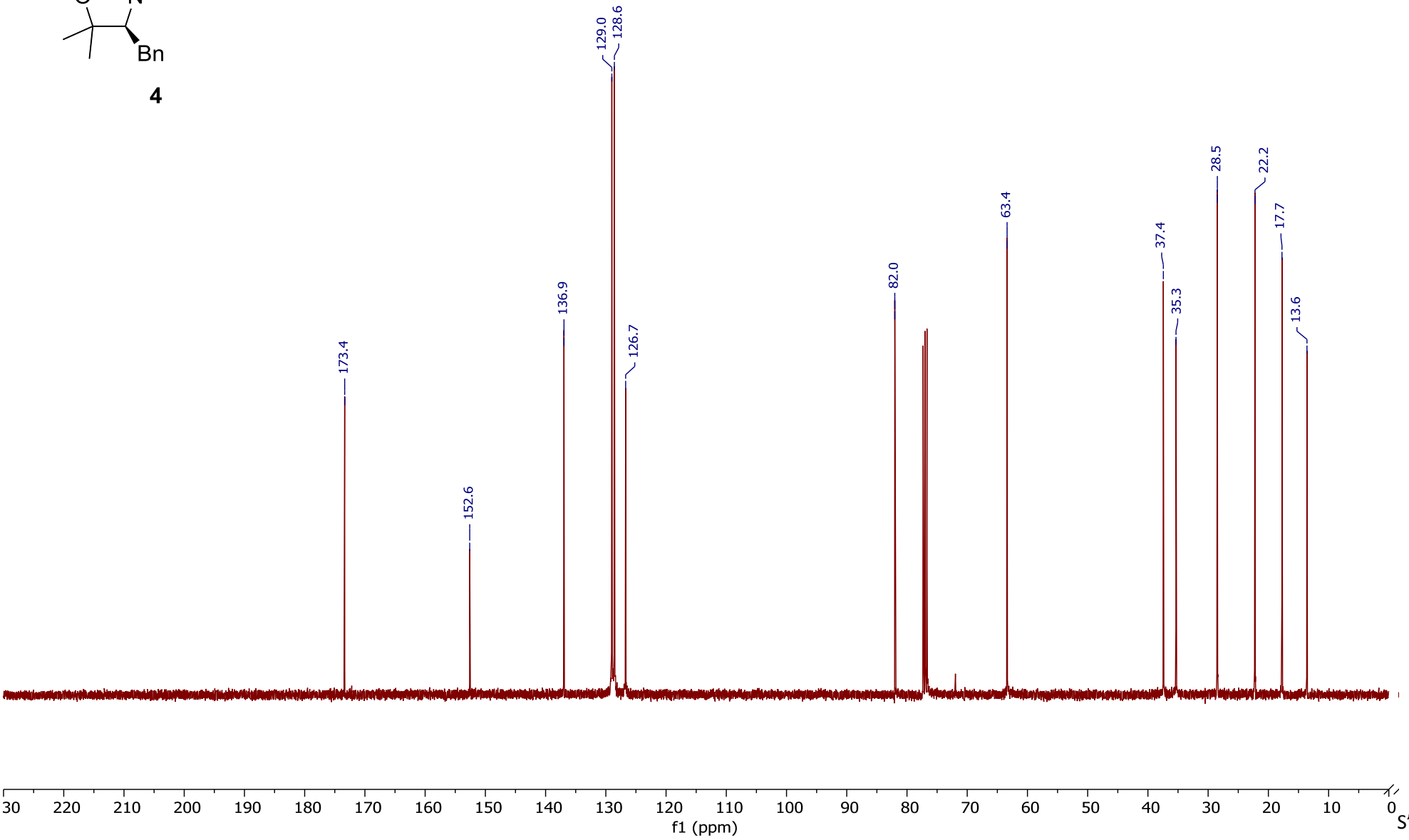

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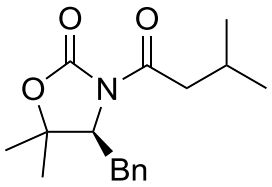

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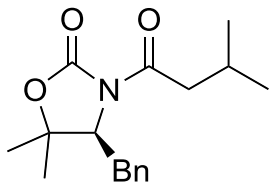

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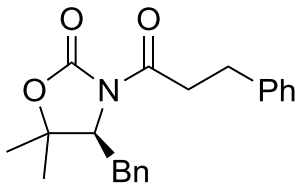

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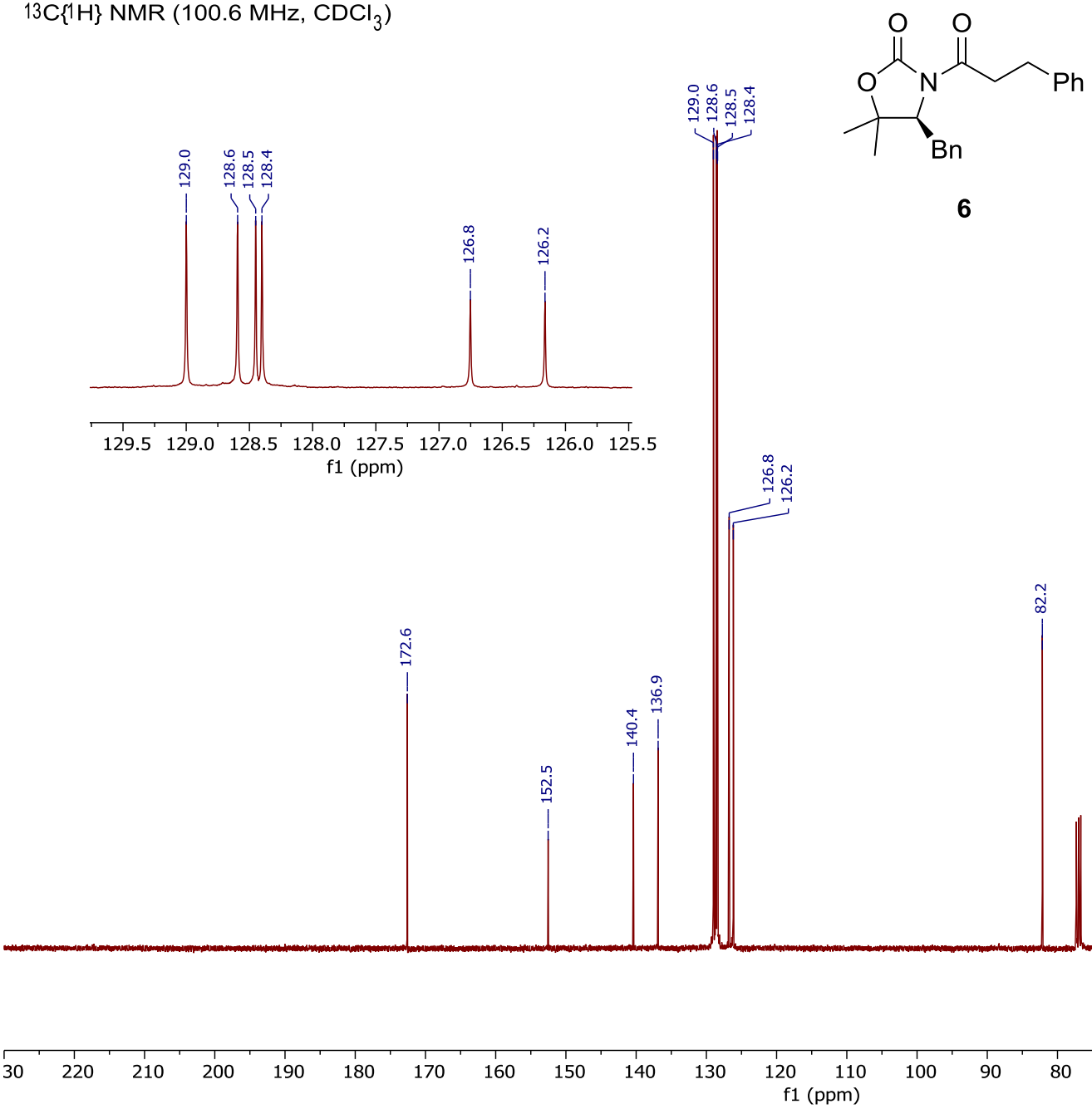

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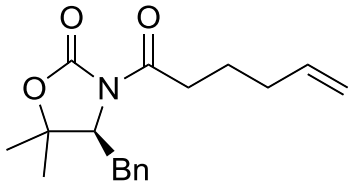

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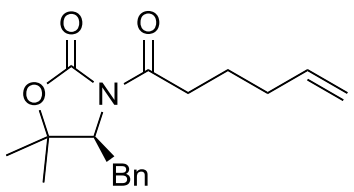

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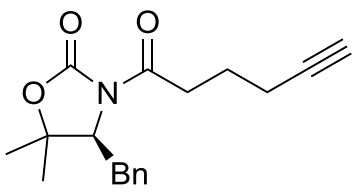

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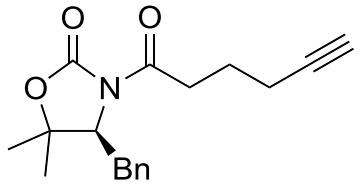

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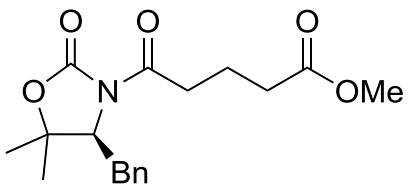

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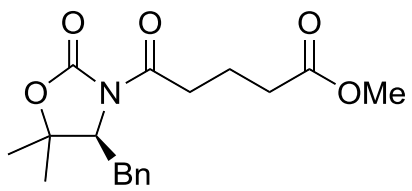

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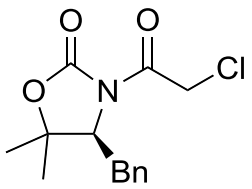

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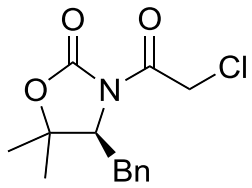

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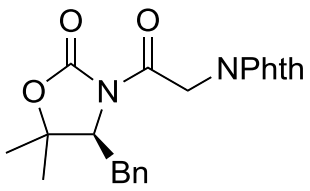

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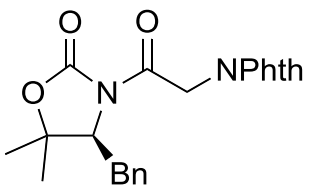

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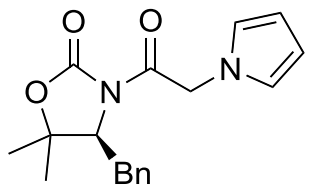

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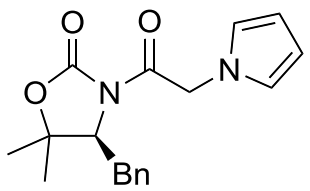

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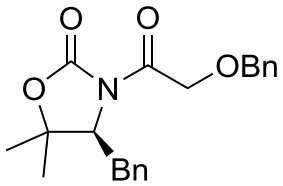

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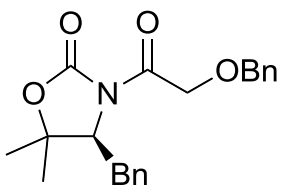

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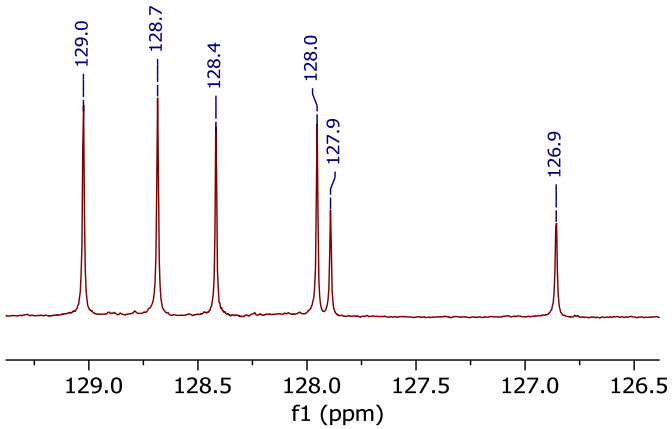

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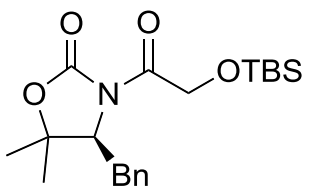

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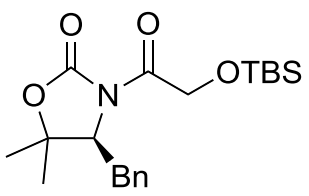

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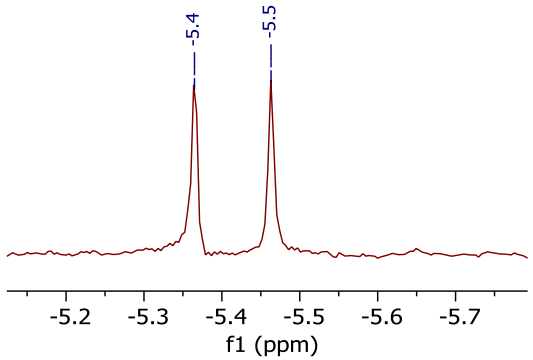
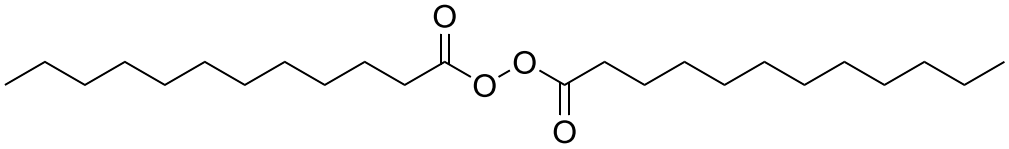


3. DIACYL PEROXIDES



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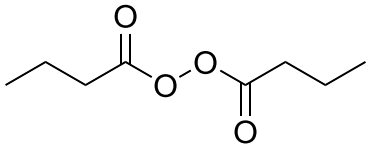

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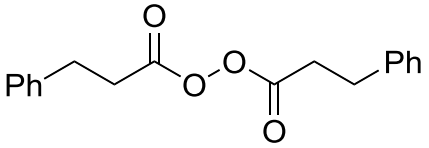

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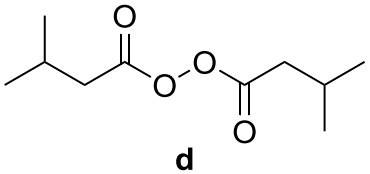

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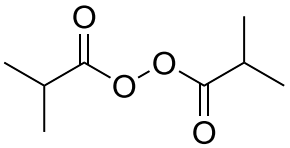

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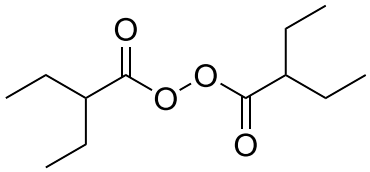

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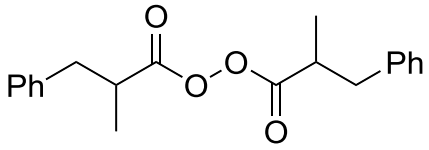

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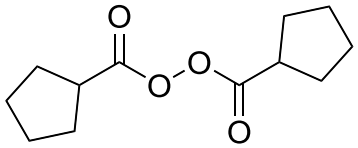

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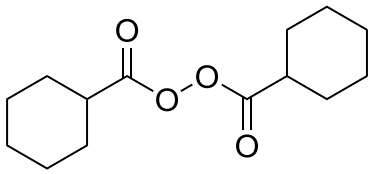

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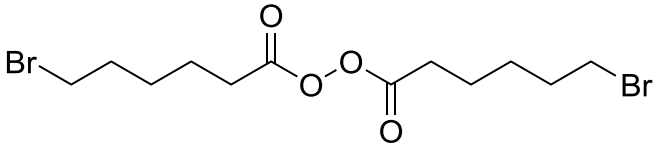

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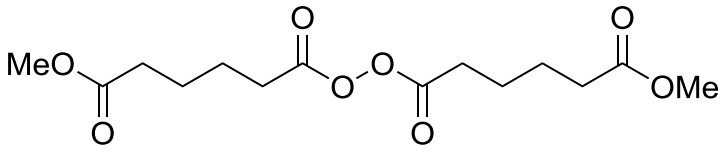

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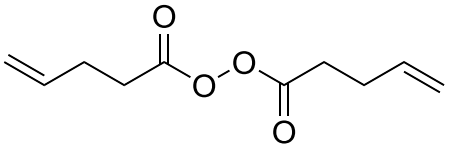

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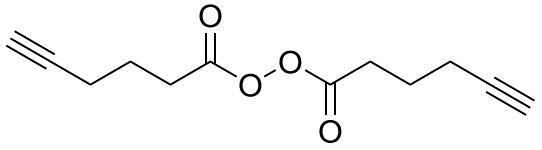
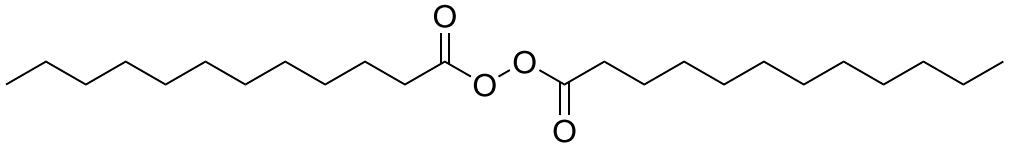


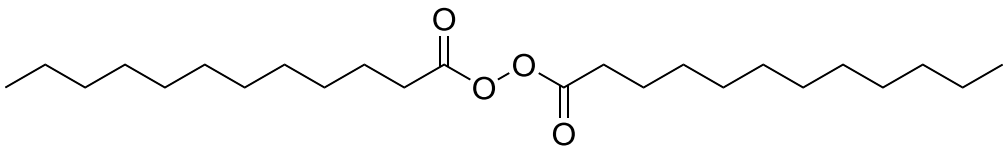
m

^{1}H NMR (400 MHz, $CDCl_3$)



a

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



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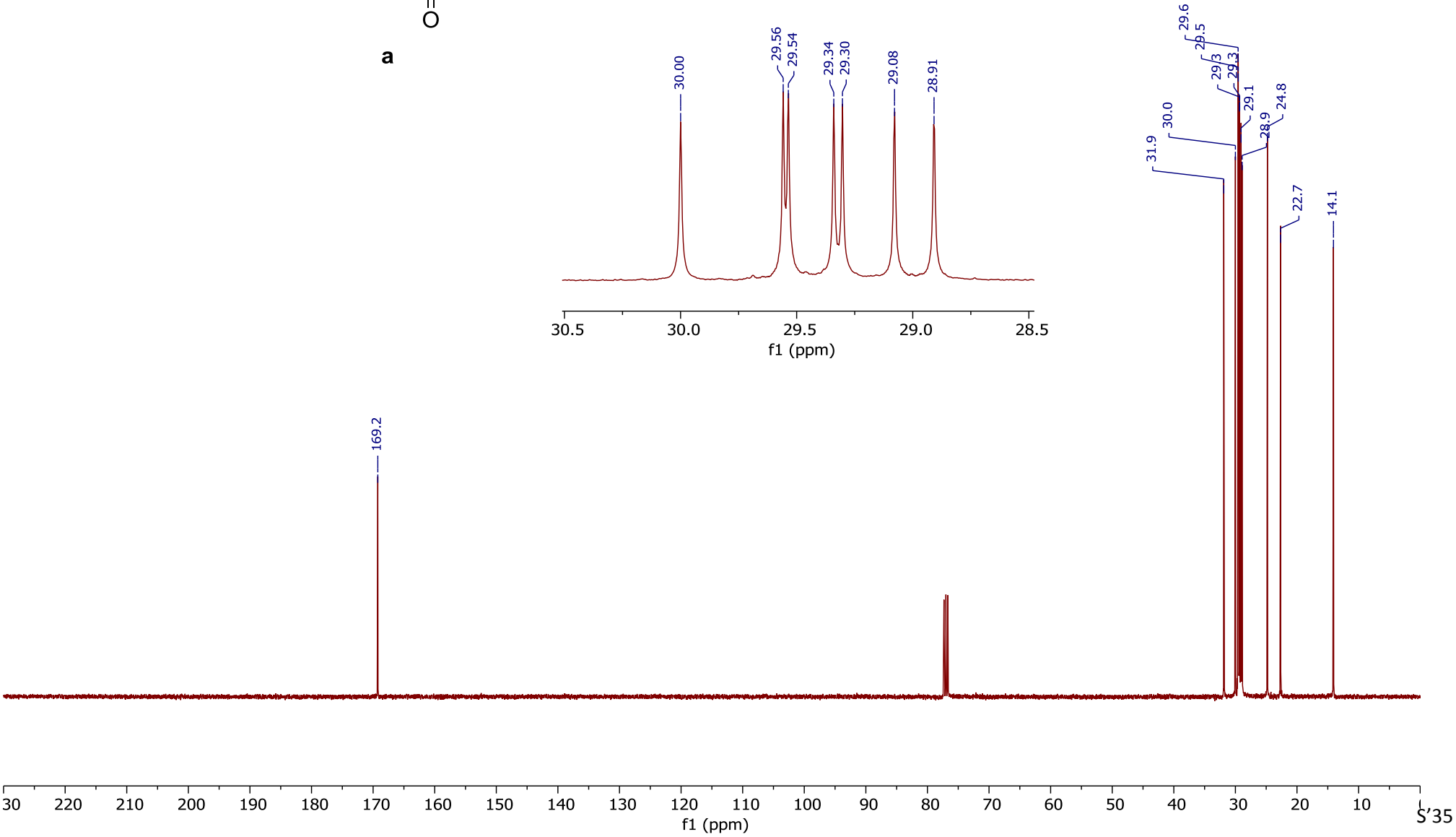
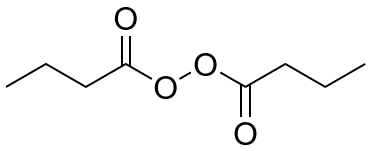


^{1}H NMR (400 MHz, $CDCl_3$)



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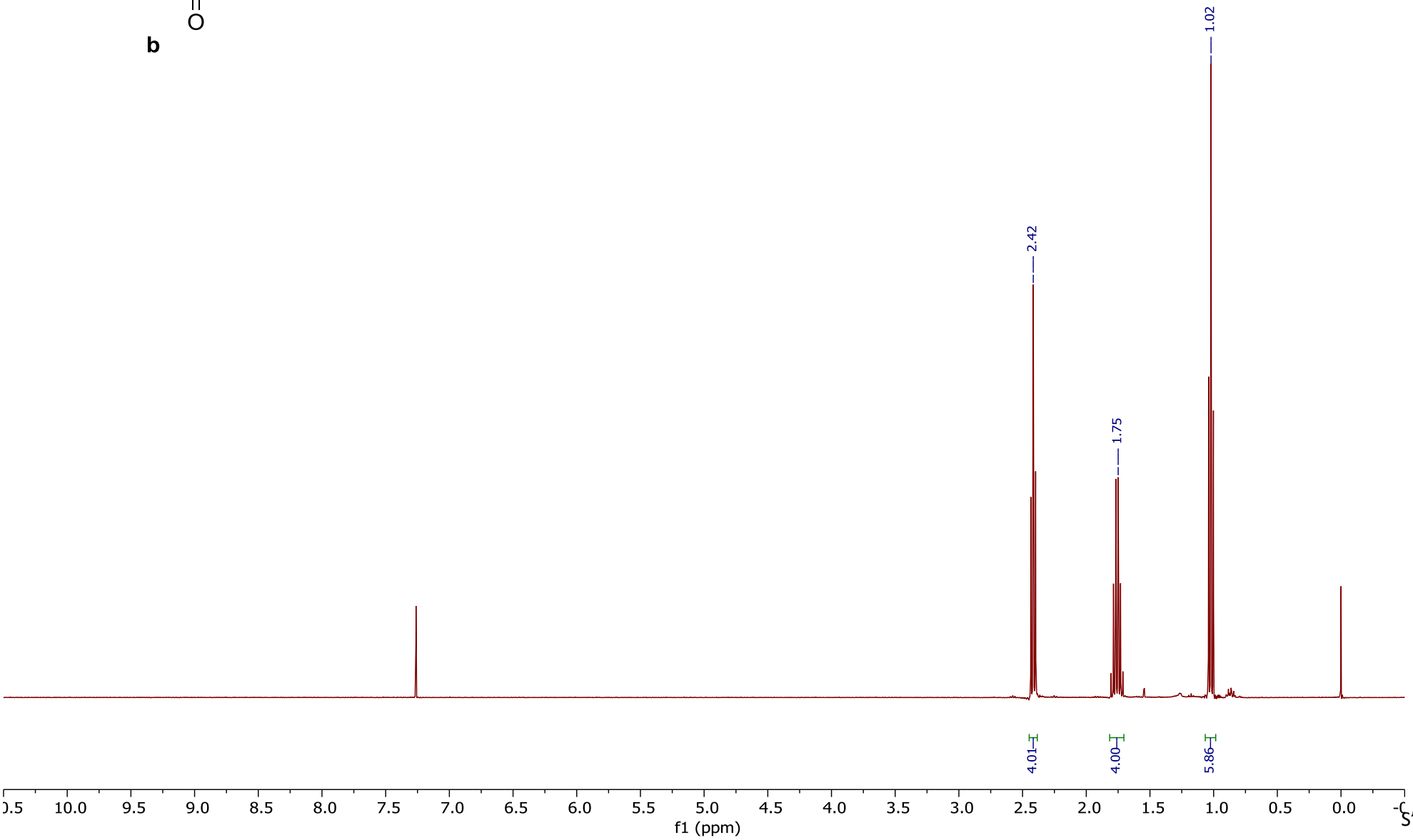
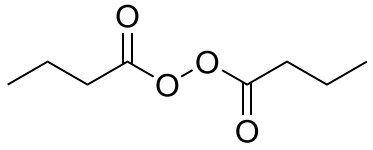


$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



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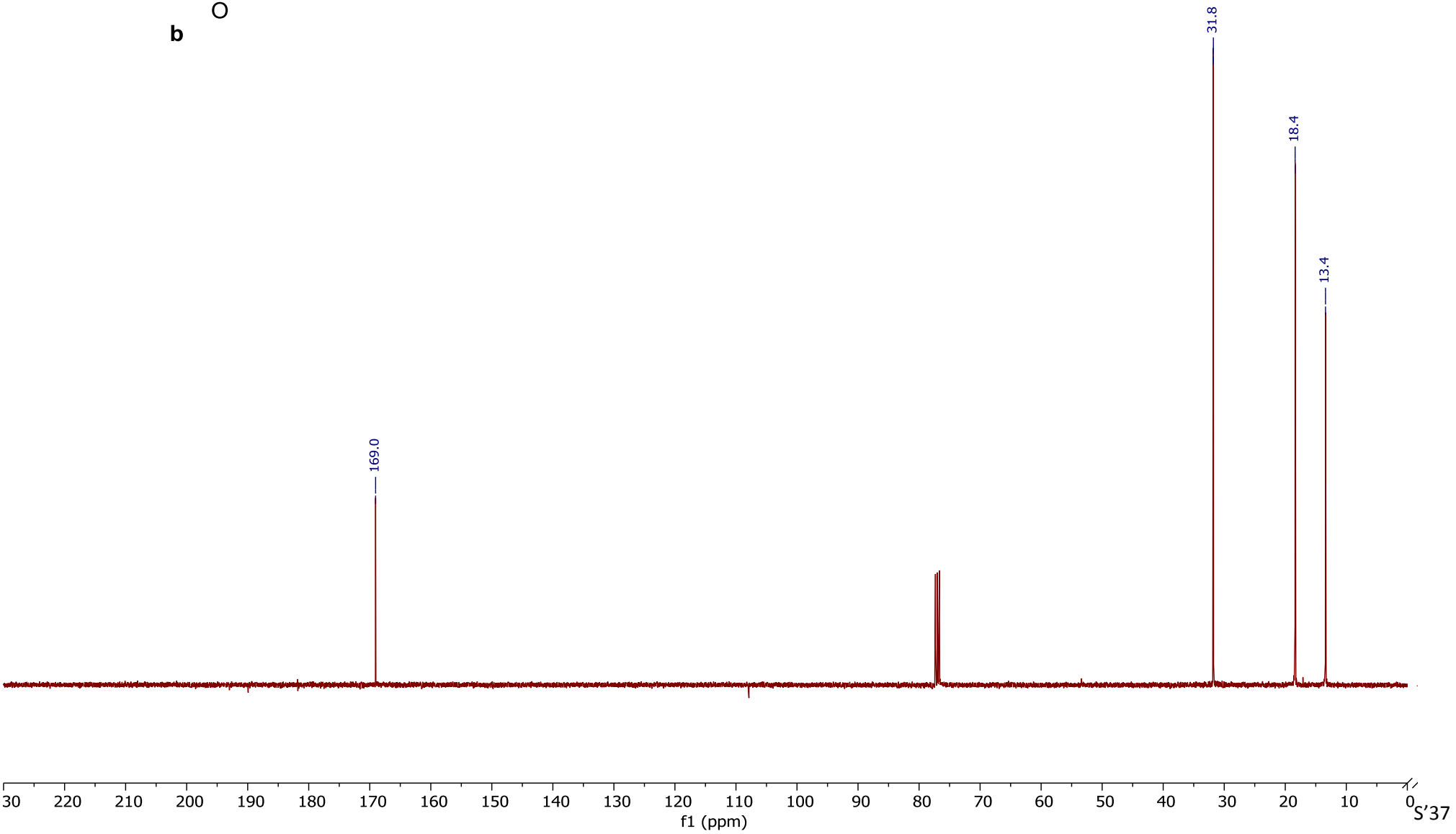
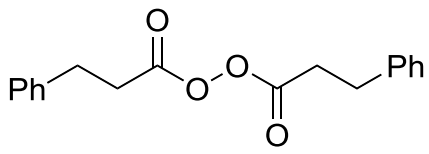


^{1}H NMR (400 MHz, $CDCl_3$)



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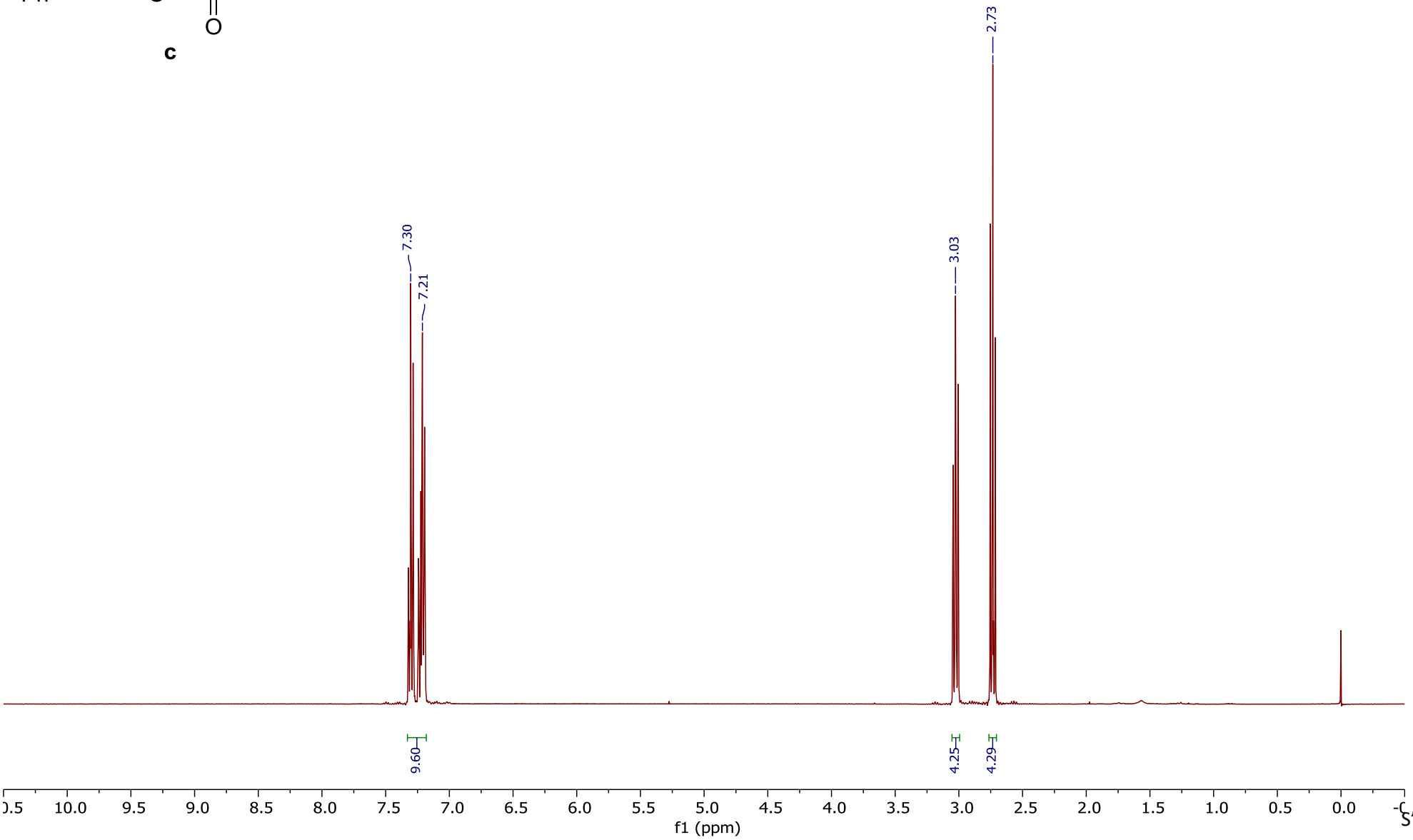
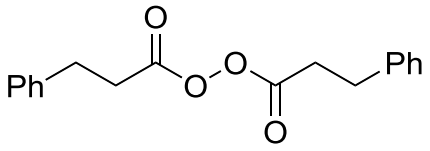
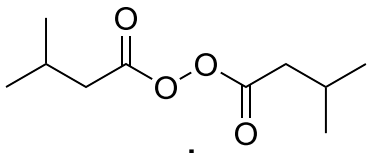


$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



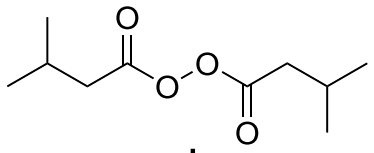
c

^{1}H NMR (400 MHz, $CDCl_3$)



d

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



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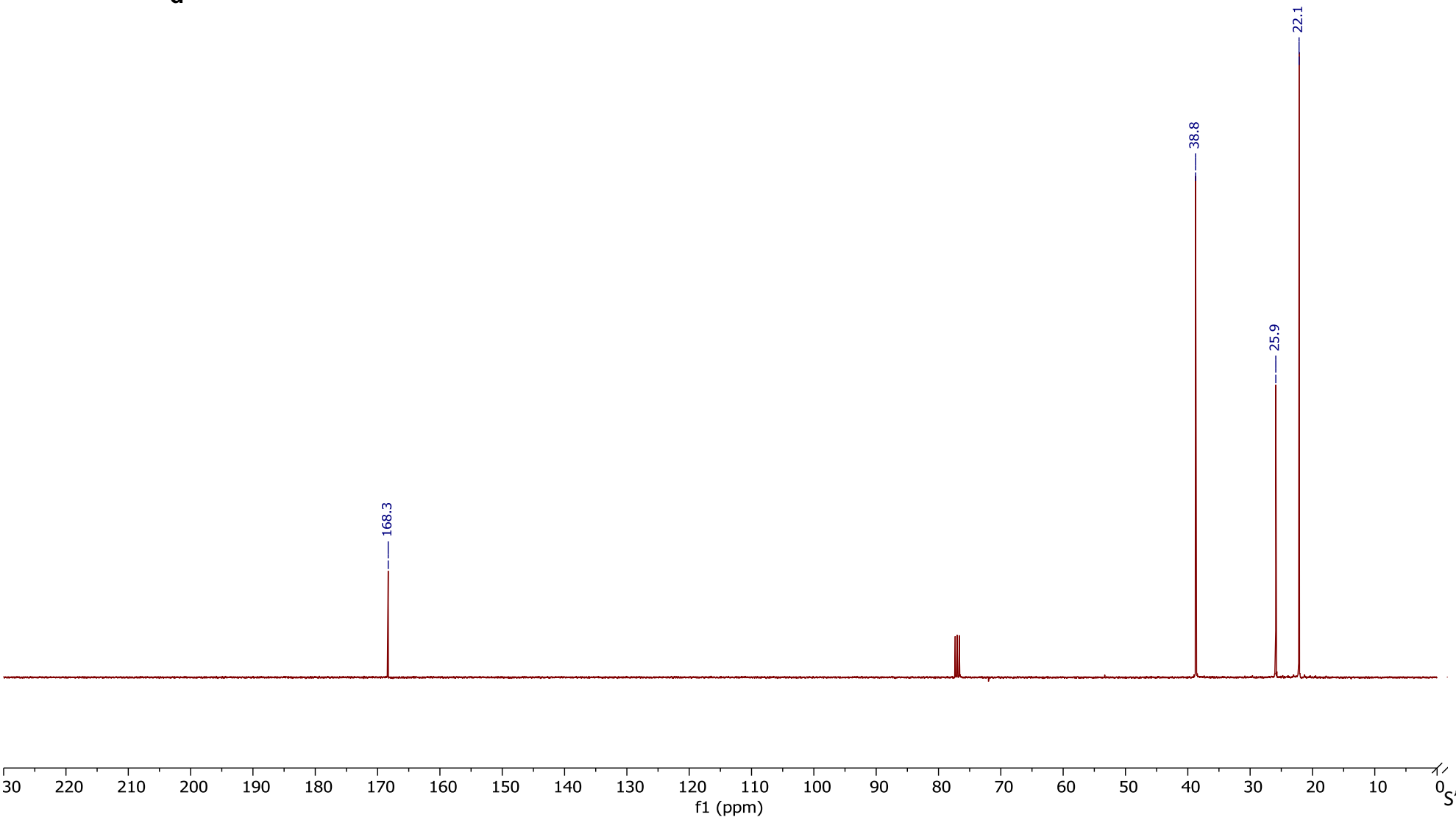
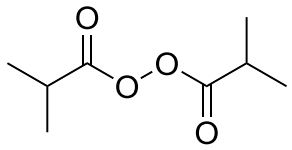


^{1}H NMR (400 MHz, $CDCl_3$)



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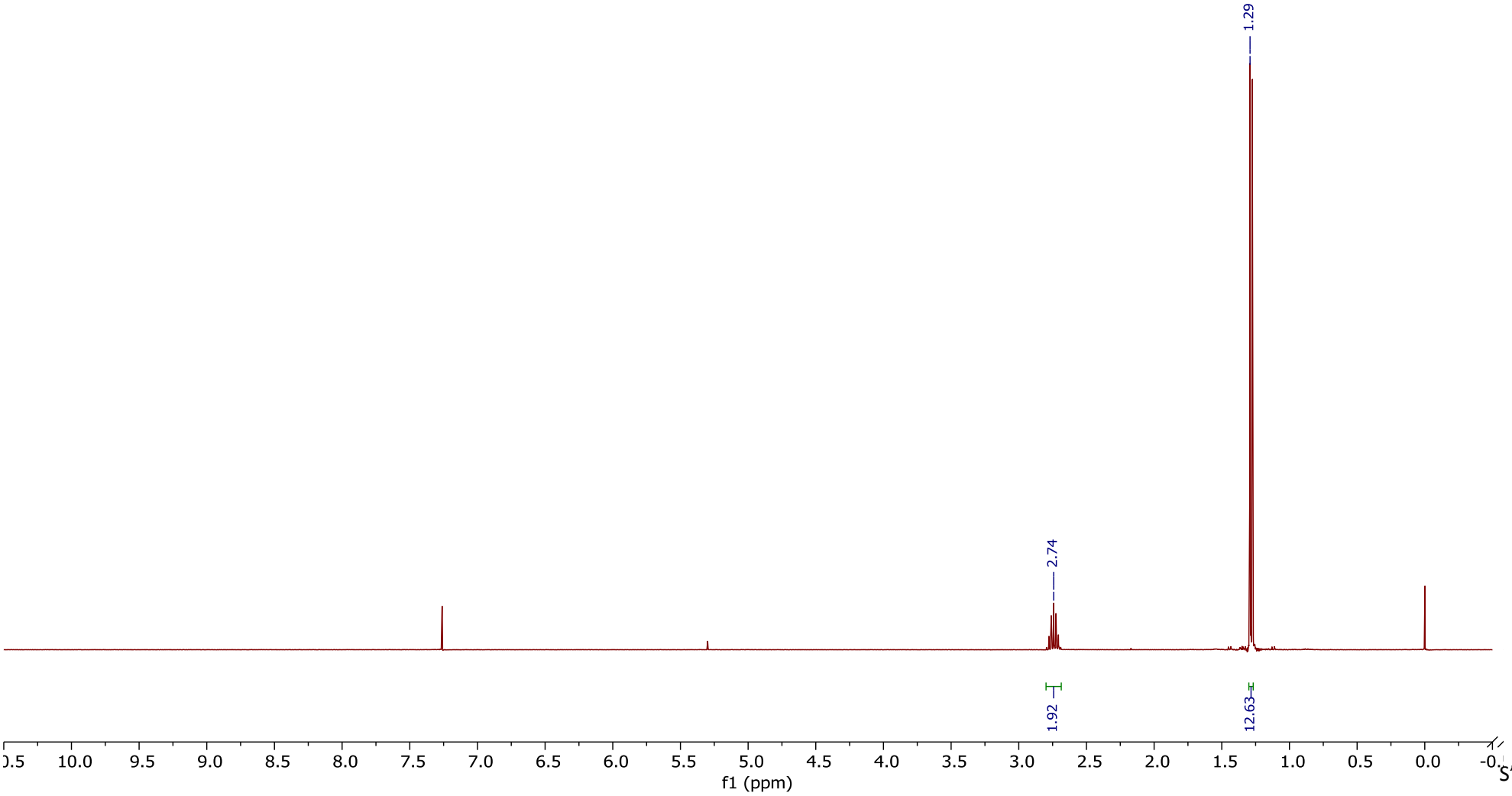
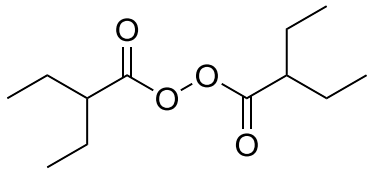


^{1}H NMR (400 MHz, $CDCl_3$)



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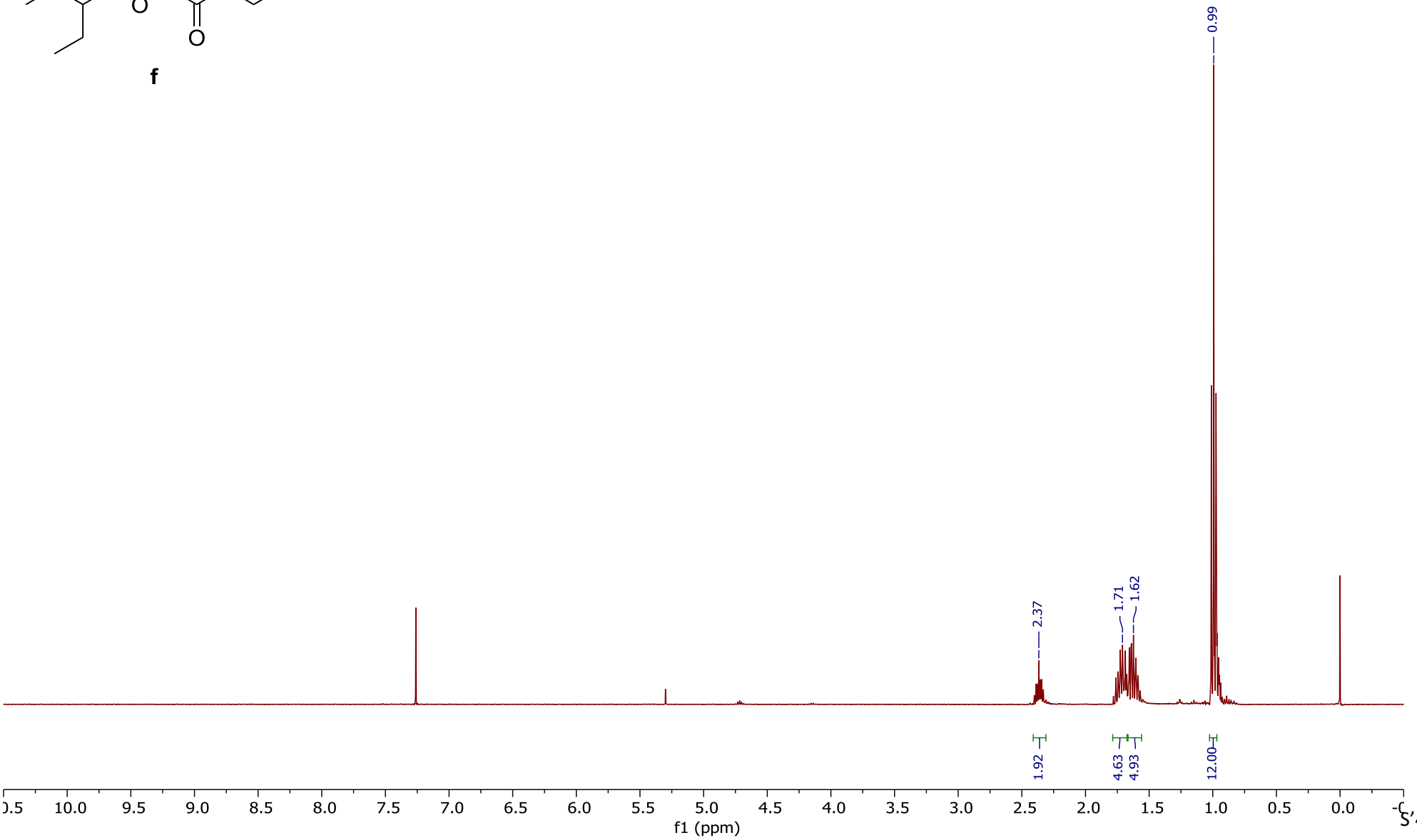
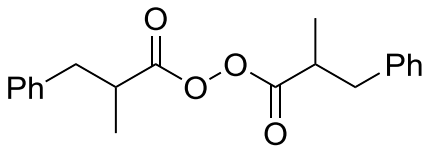


^{1}H NMR (400 MHz, $CDCl_3$)



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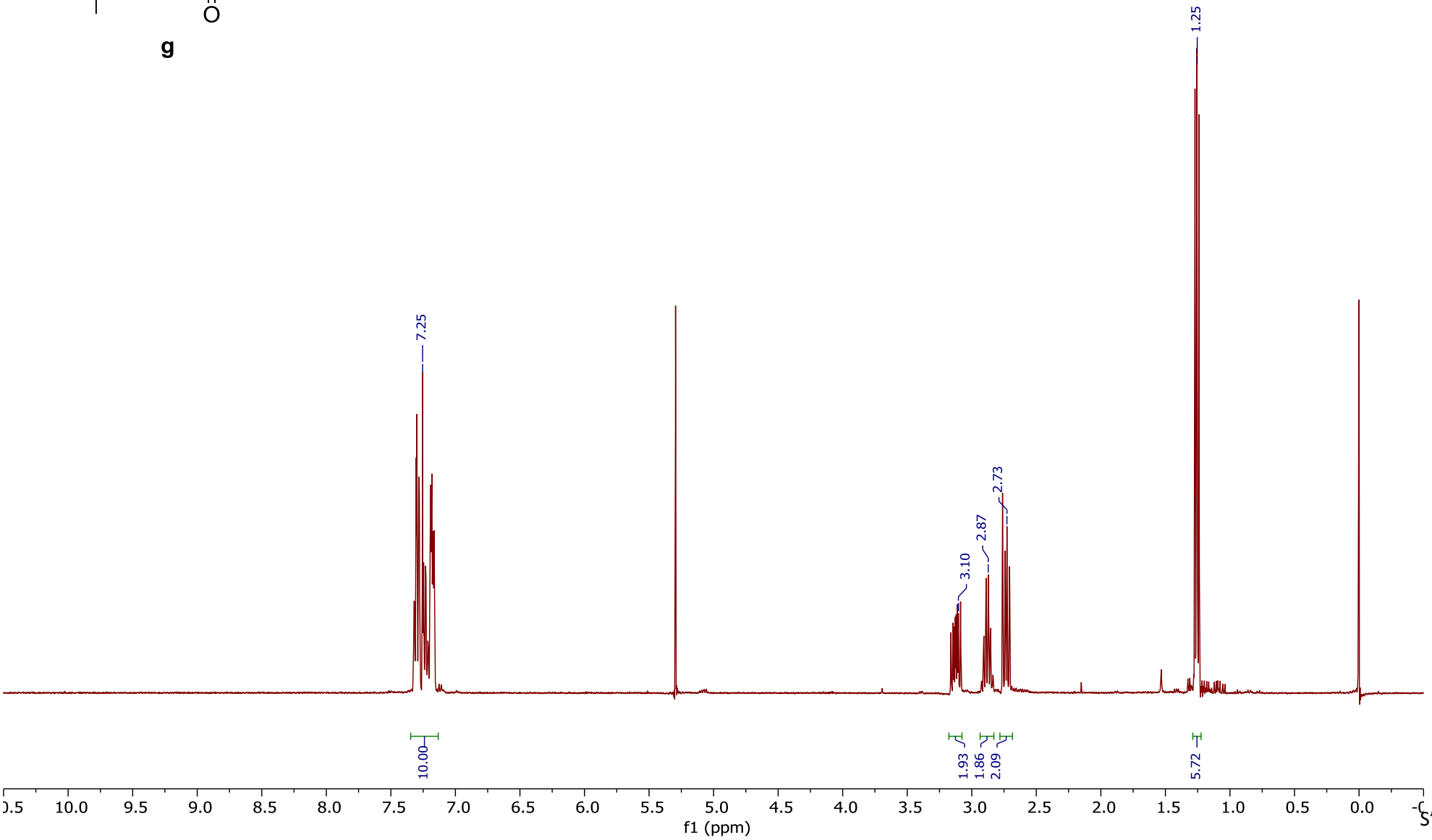

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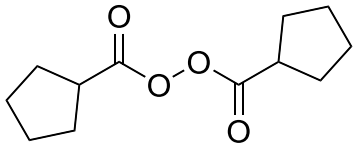

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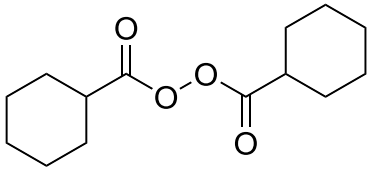

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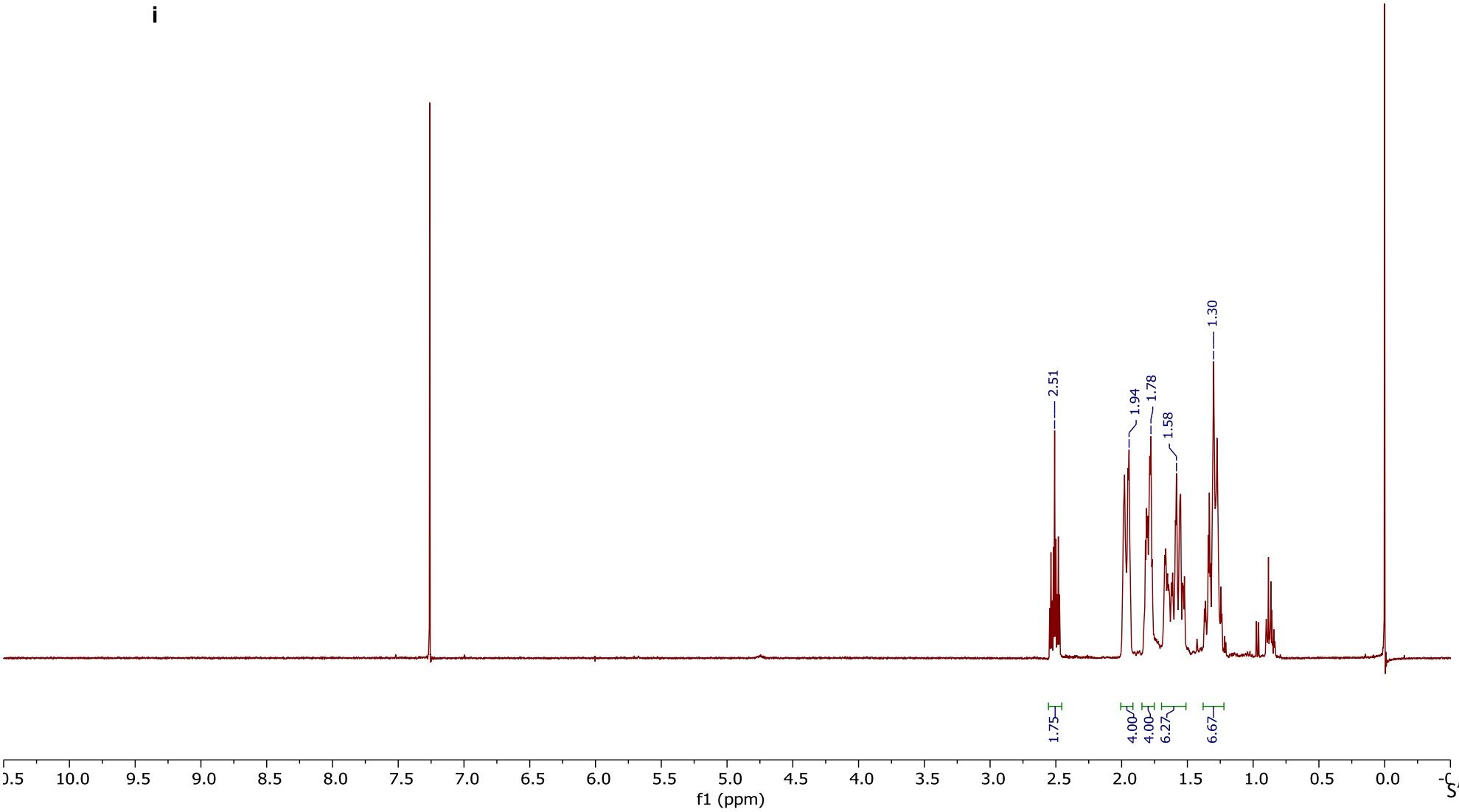
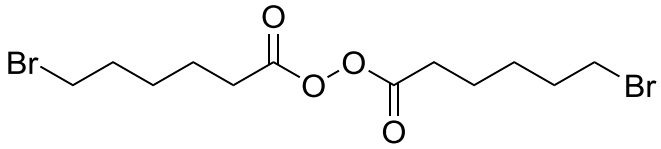


^{1}H NMR (400 MHz, $CDCl_3$)



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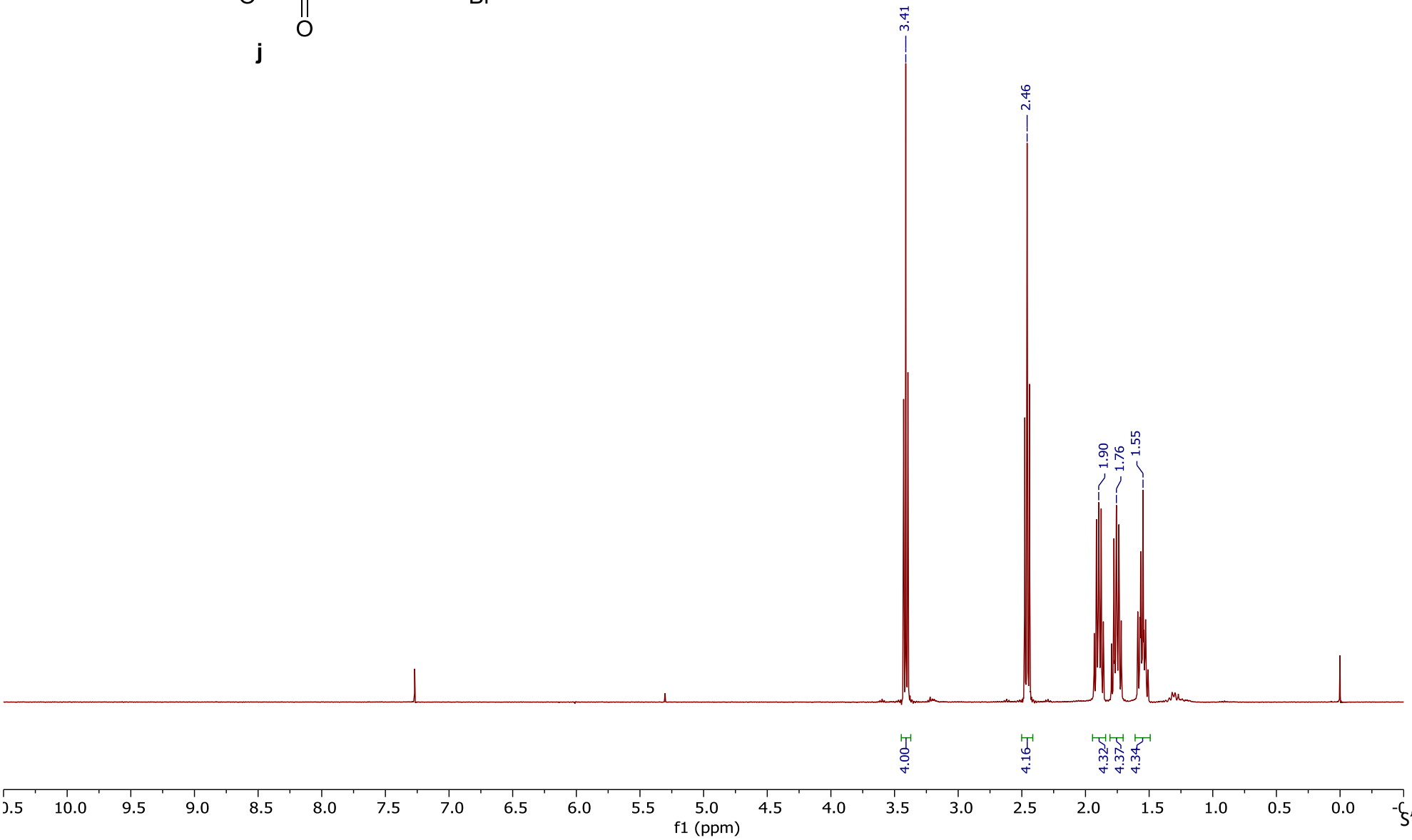
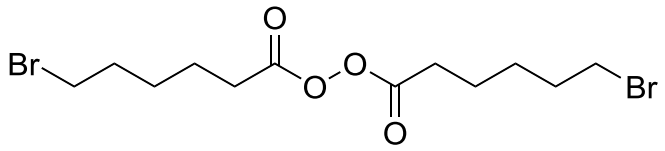


$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



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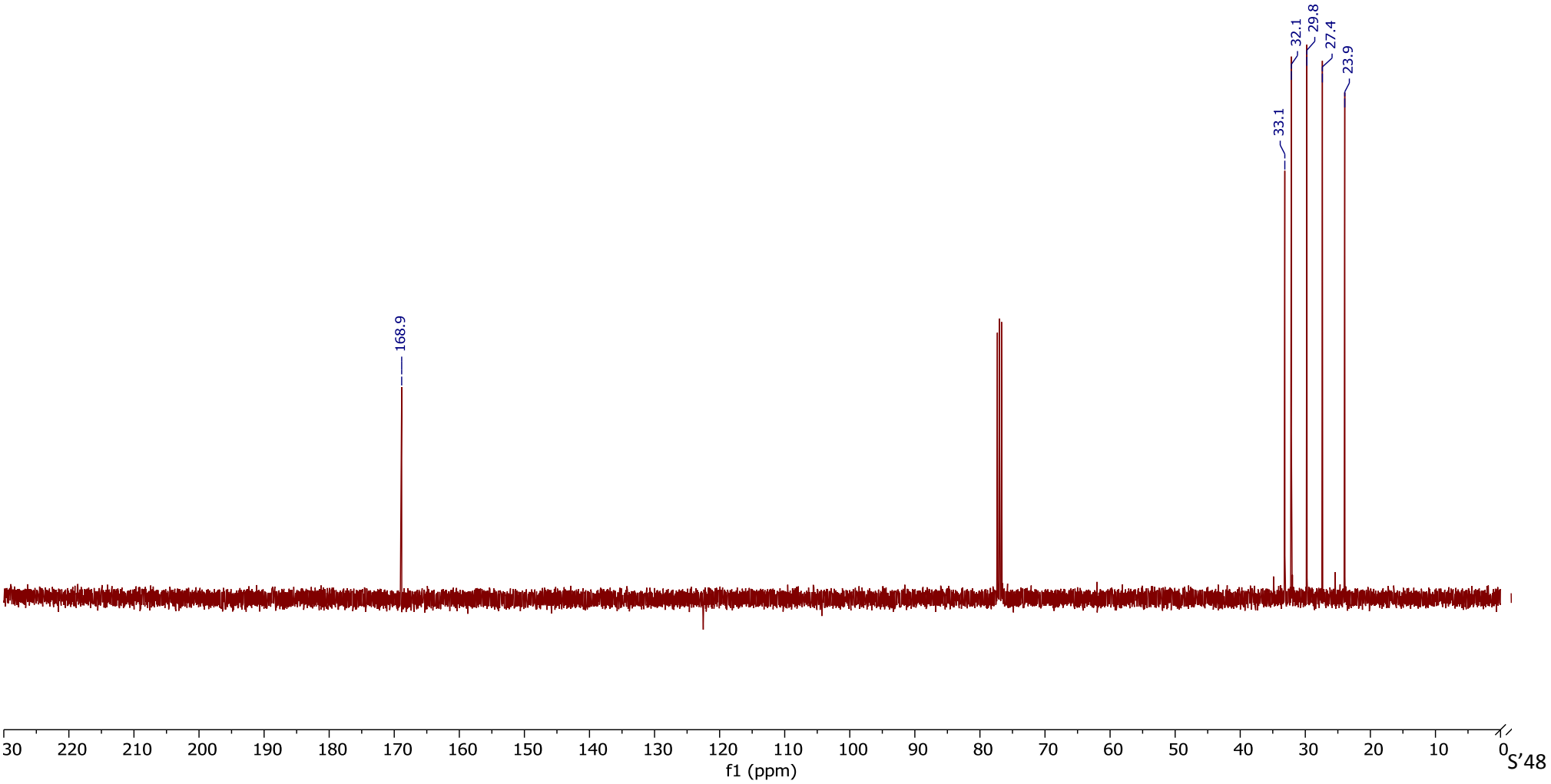
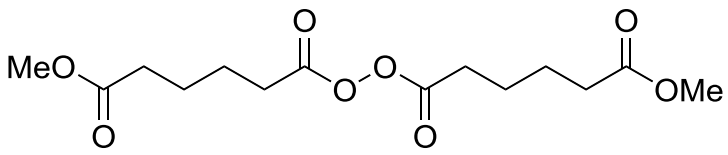


^{1}H NMR (400 MHz, $CDCl_3$)



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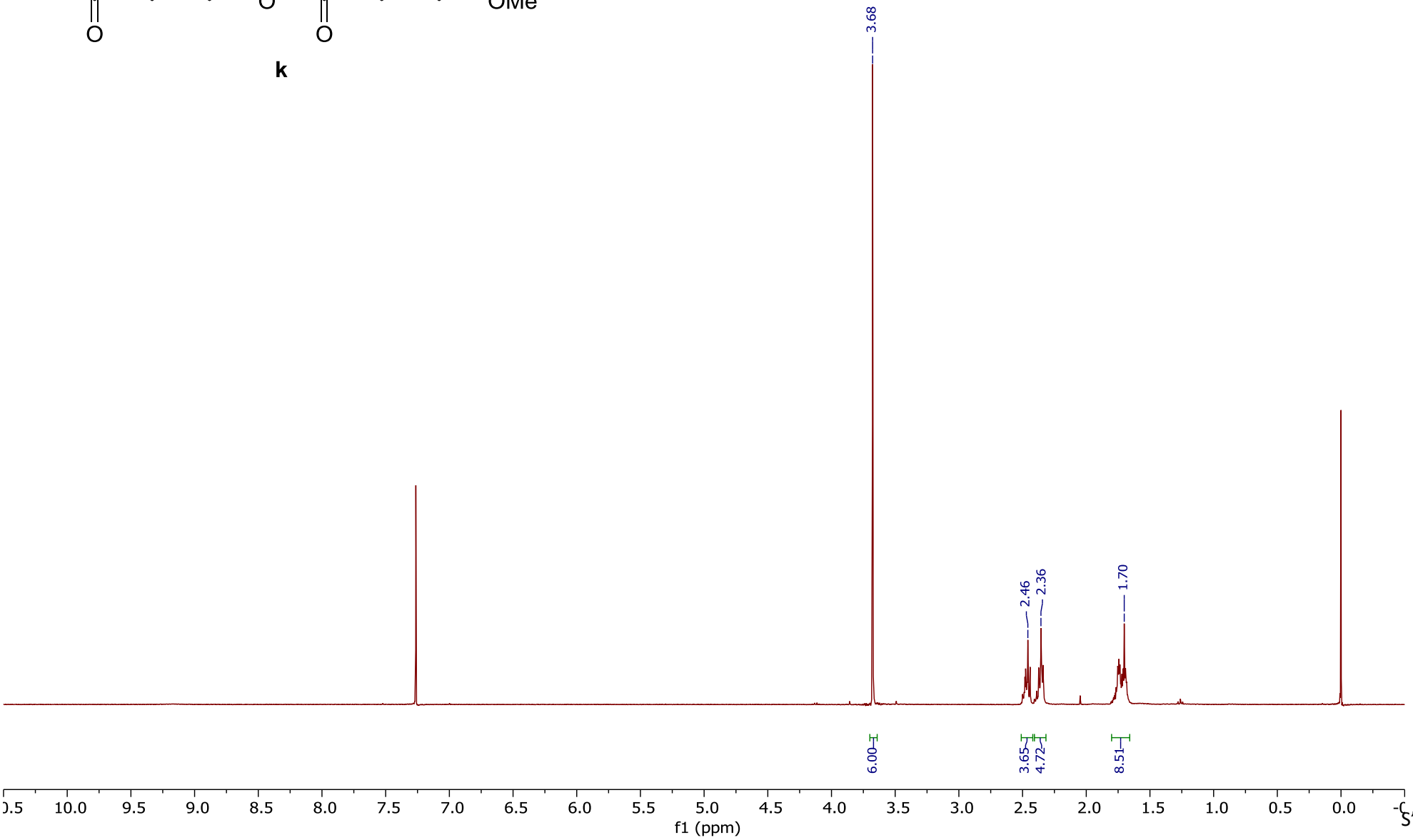
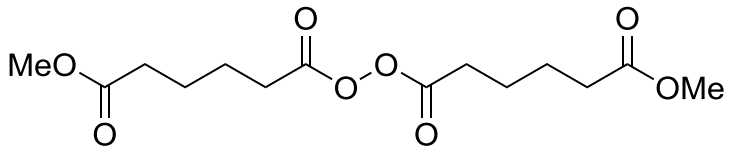


$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



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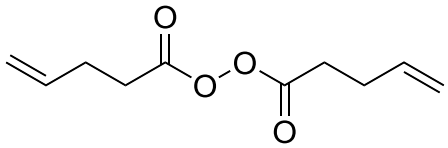

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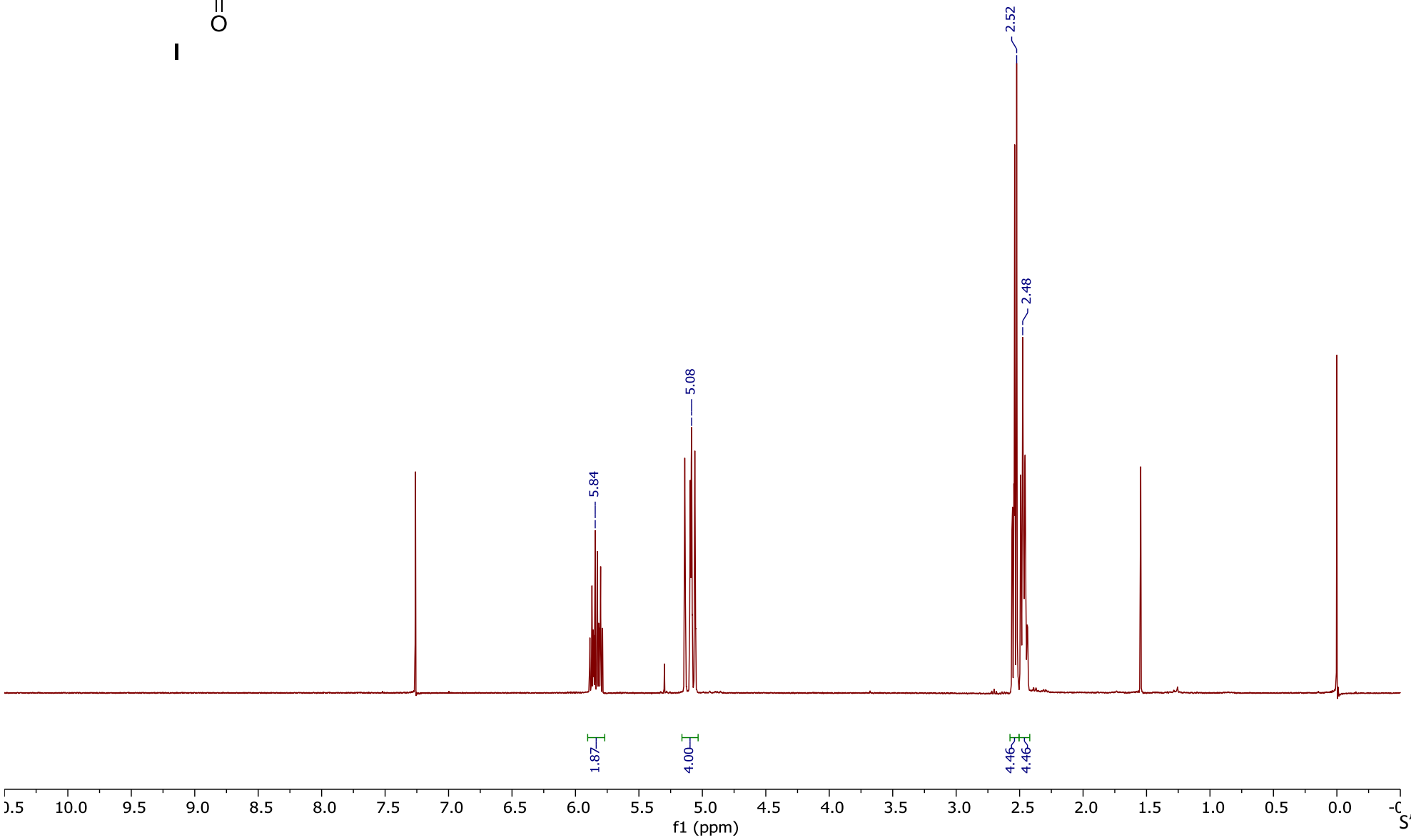
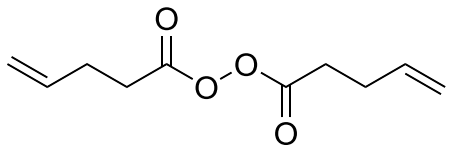


$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



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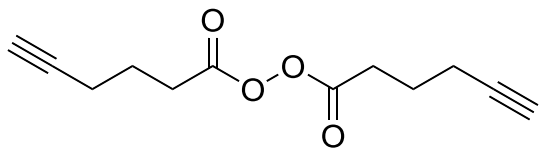
^{1}H NMR (400 MHz, $CDCl_3$)



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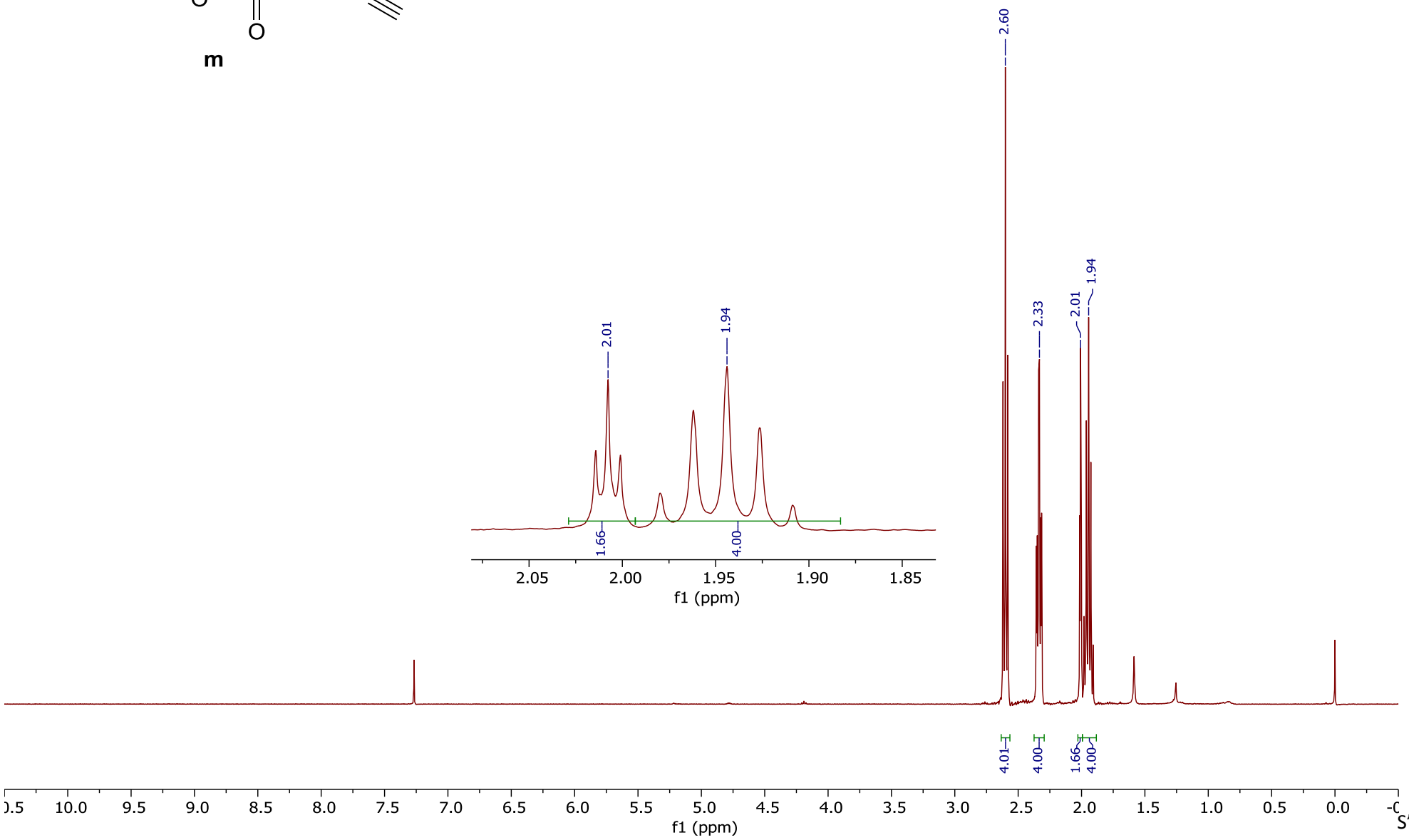
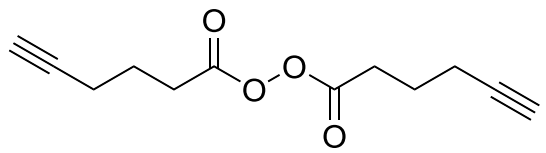


$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



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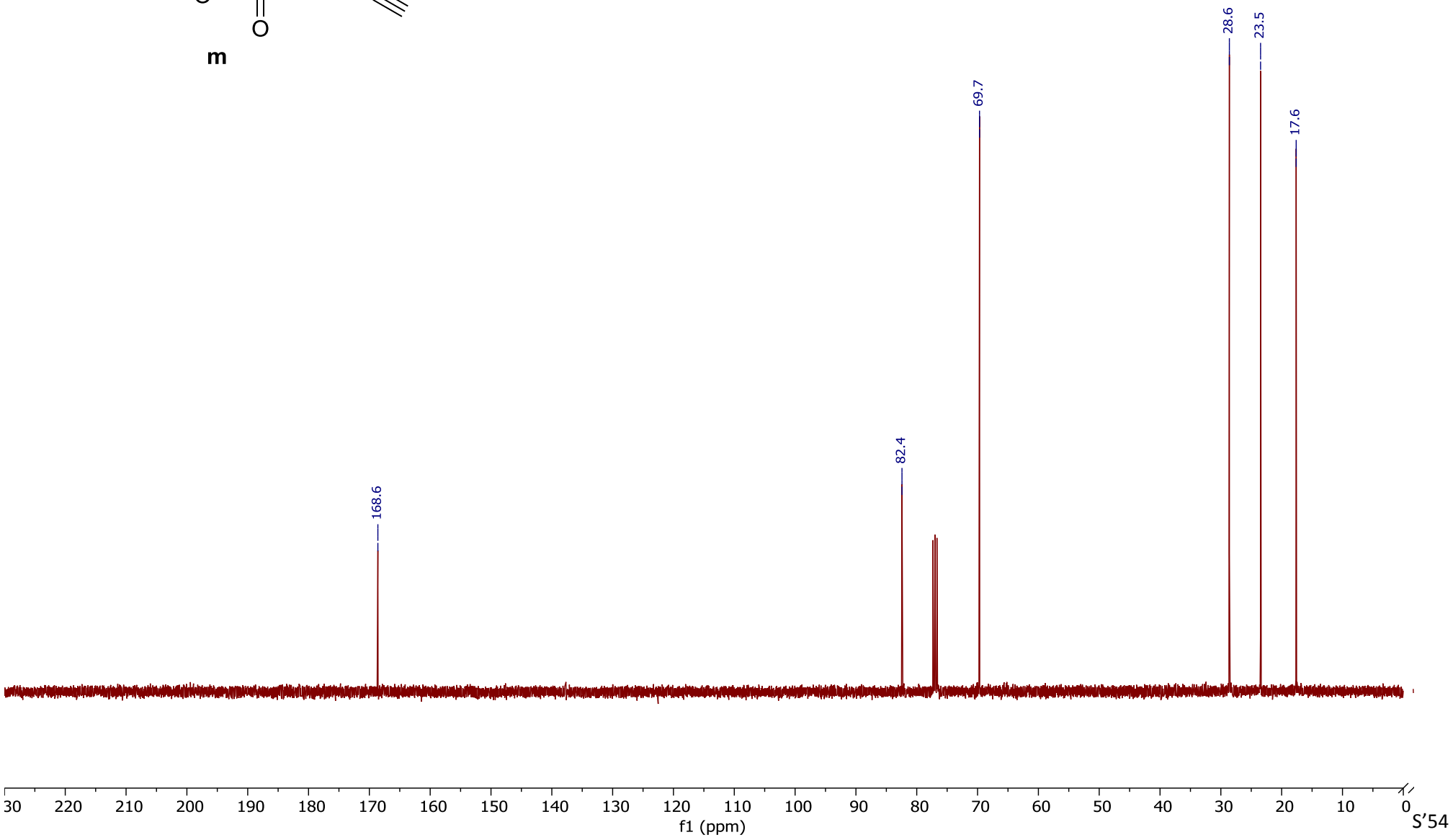
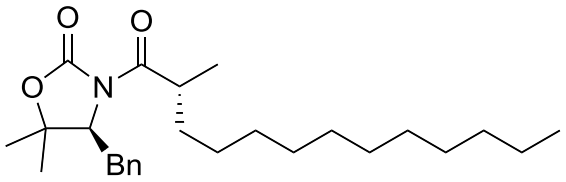


4. Alkylation Products (Table 1)



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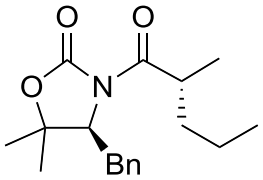

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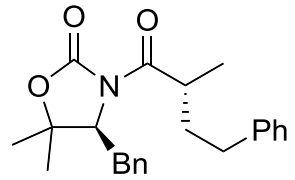

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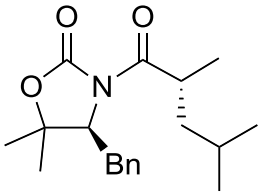

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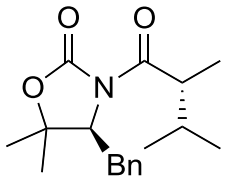

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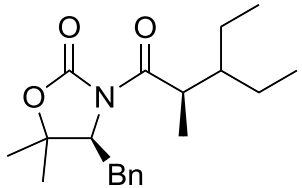

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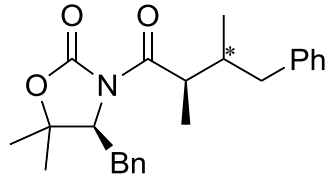

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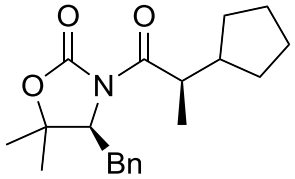

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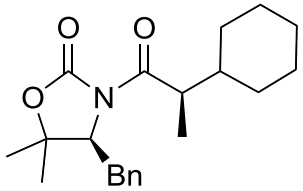

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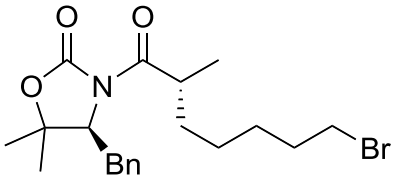

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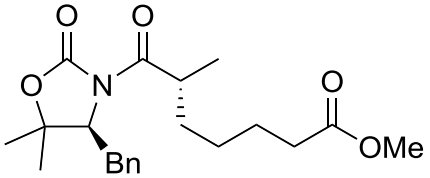
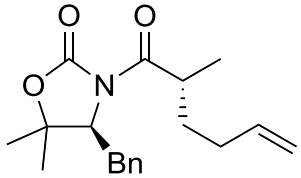
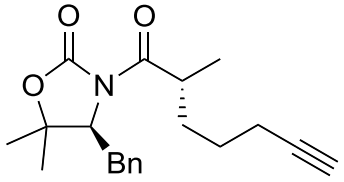


3k

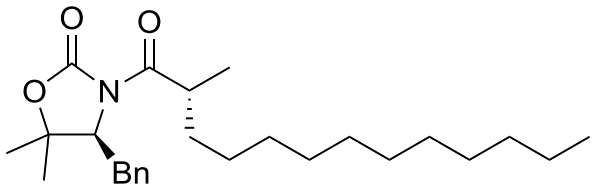


3l



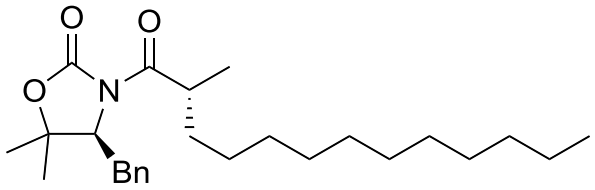
3m

^{1}H NMR (400 MHz, $CDCl_3$)

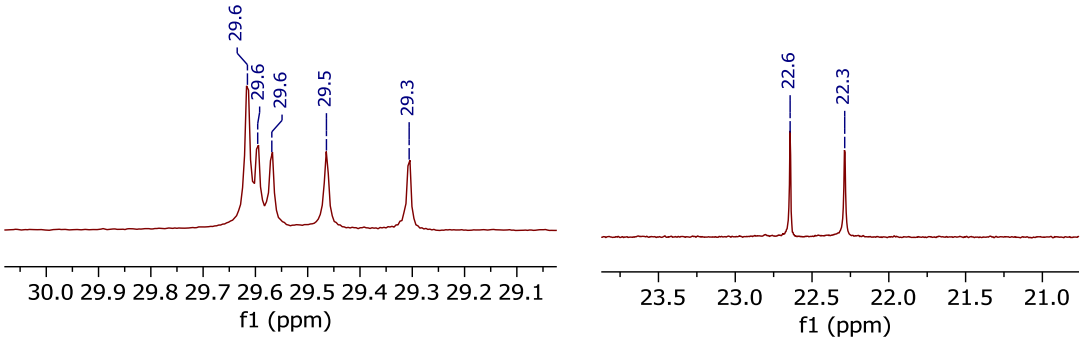


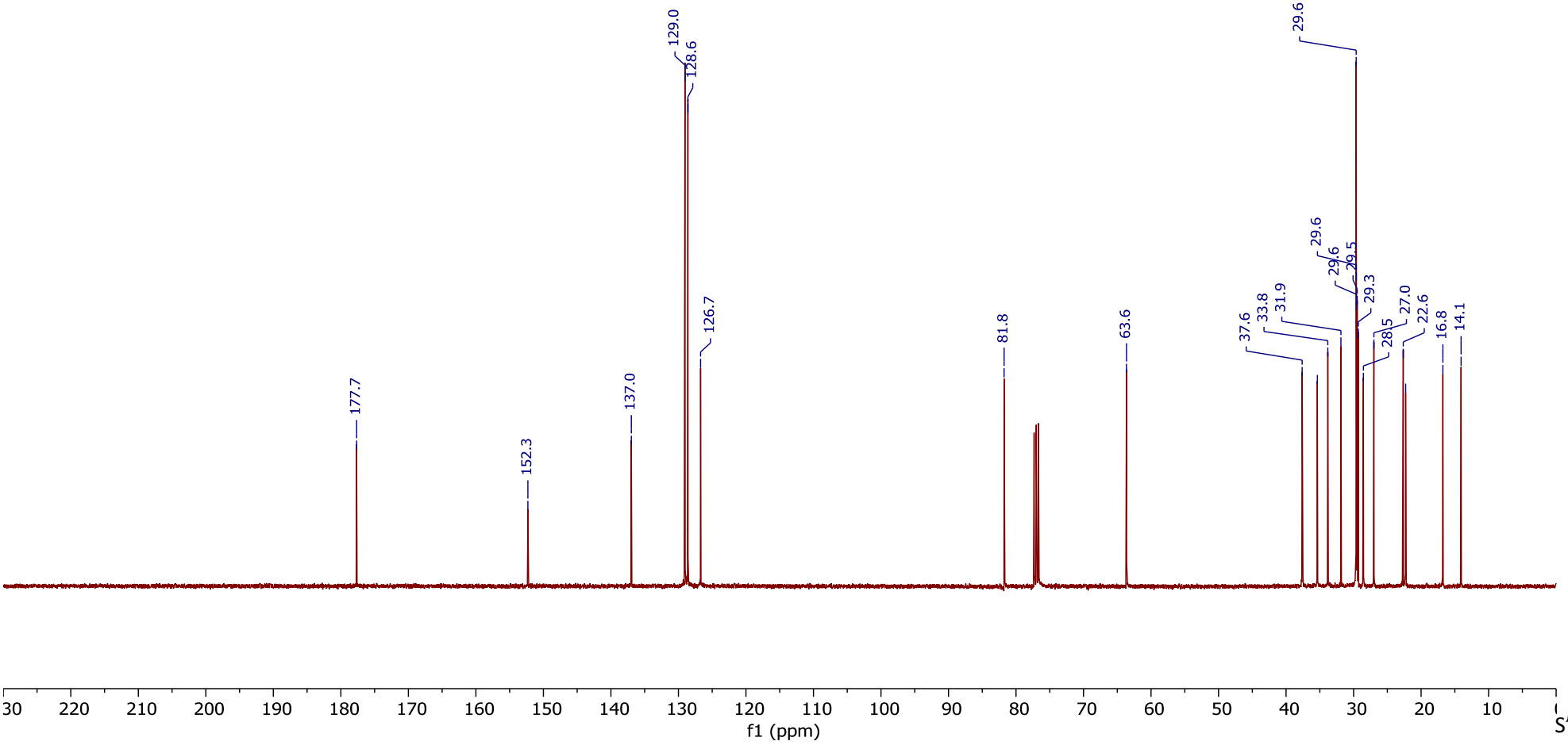
3a

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)

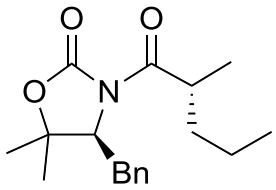


3a



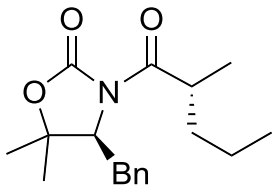


^{1}H NMR (400 MHz, $CDCl_3$)



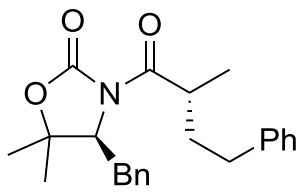
3b

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



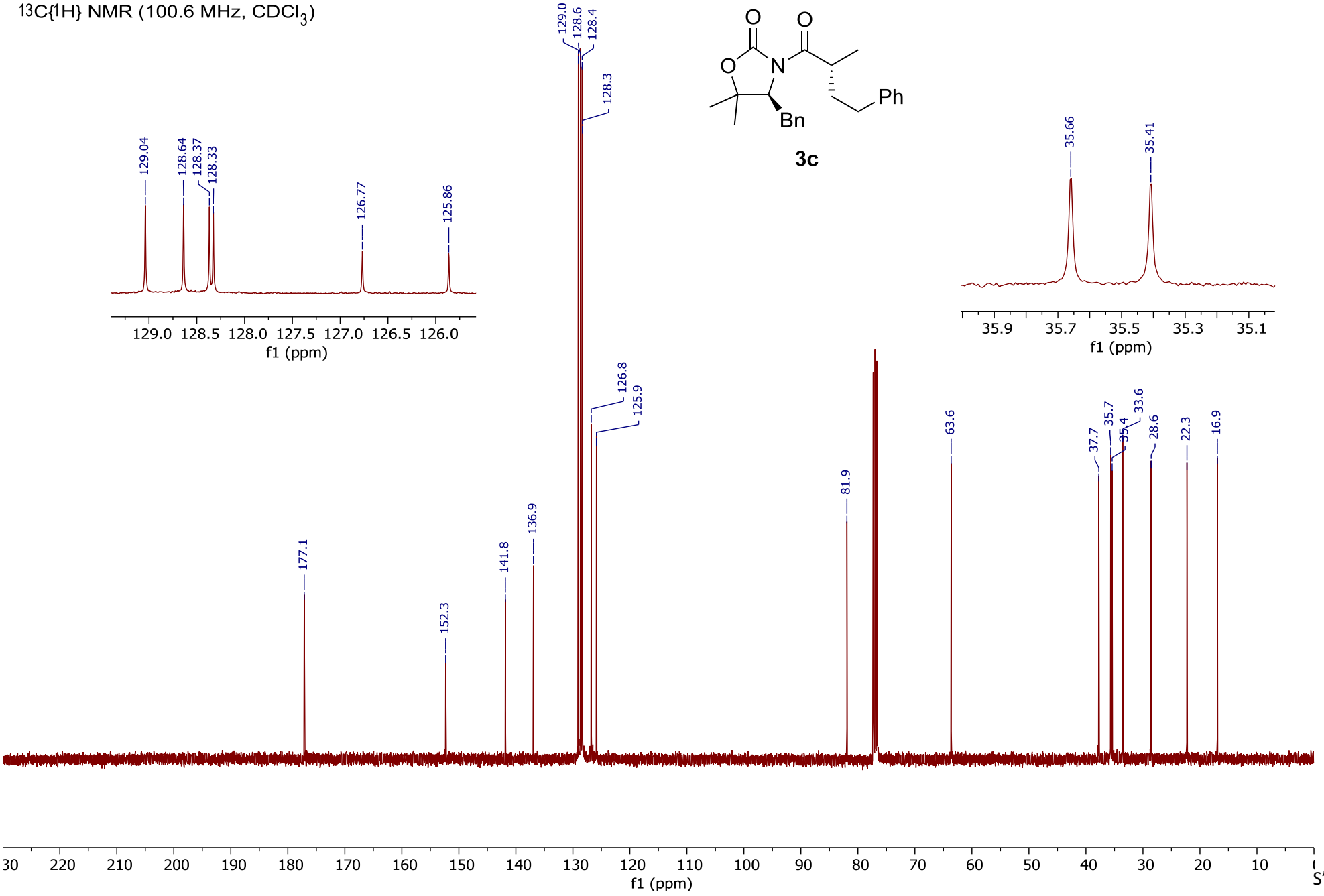
3b

^{1}H NMR (400 MHz, $CDCl_3$)

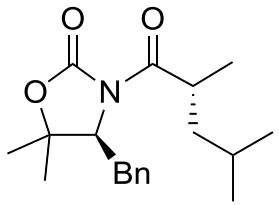


3c

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)

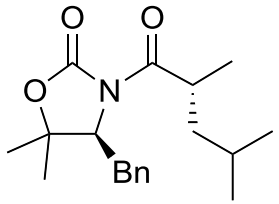


^{1}H NMR (400 MHz, $CDCl_3$)

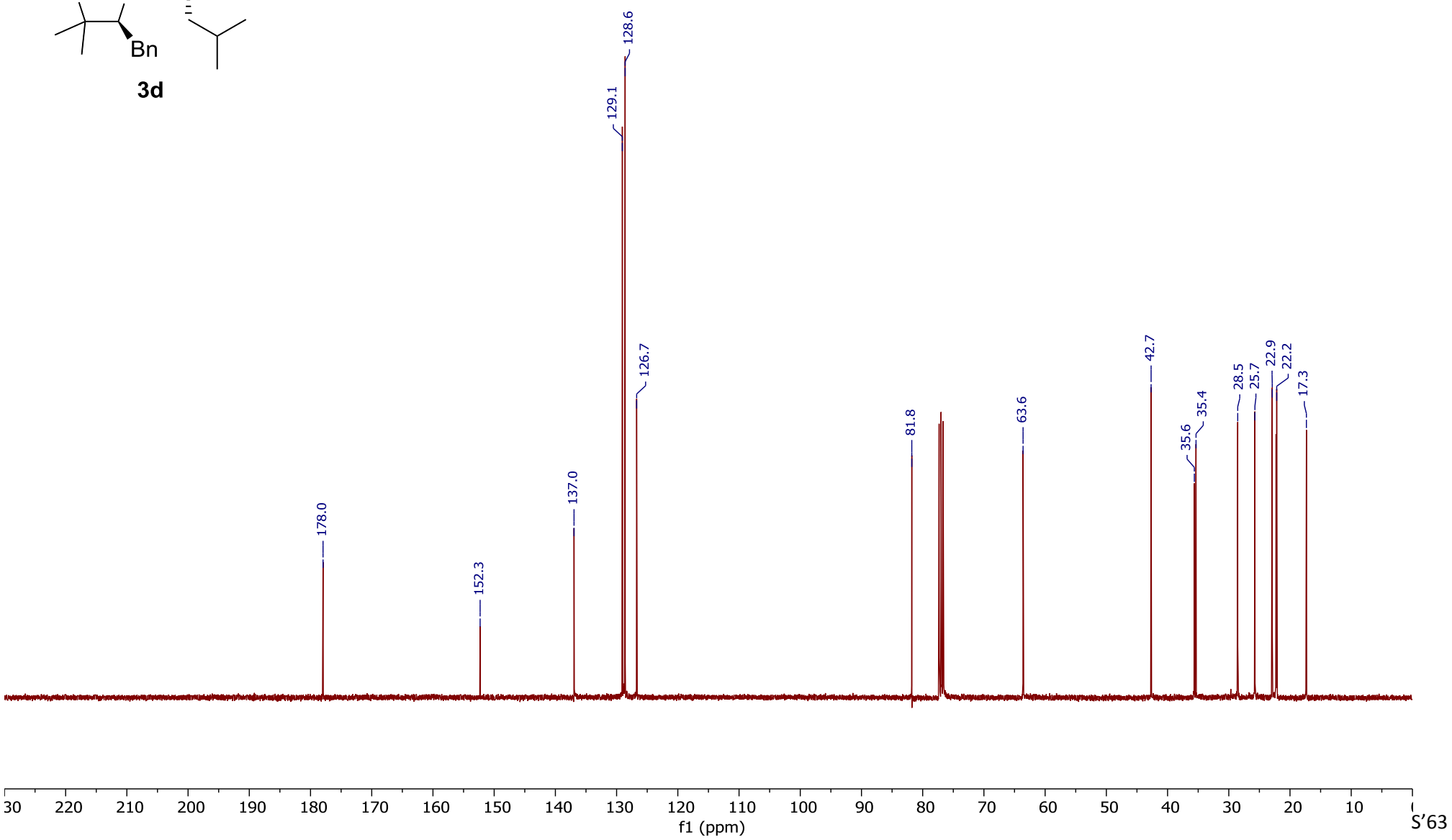


3d

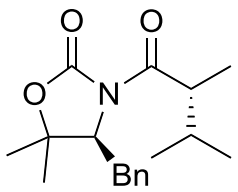
$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



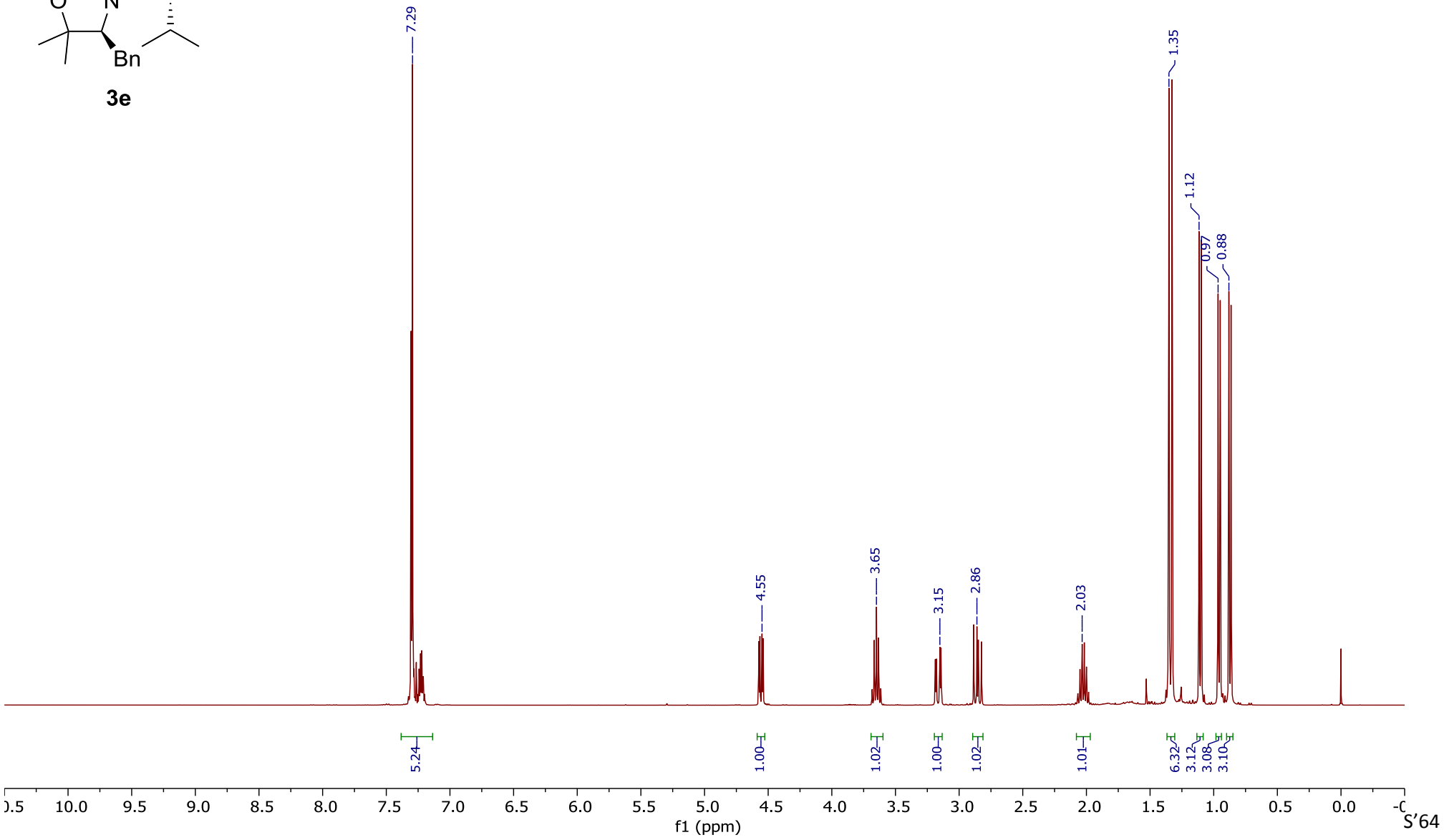
3d



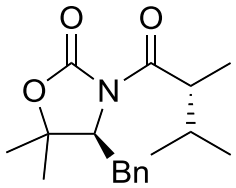
^{1}H NMR (400 MHz, $CDCl_3$)



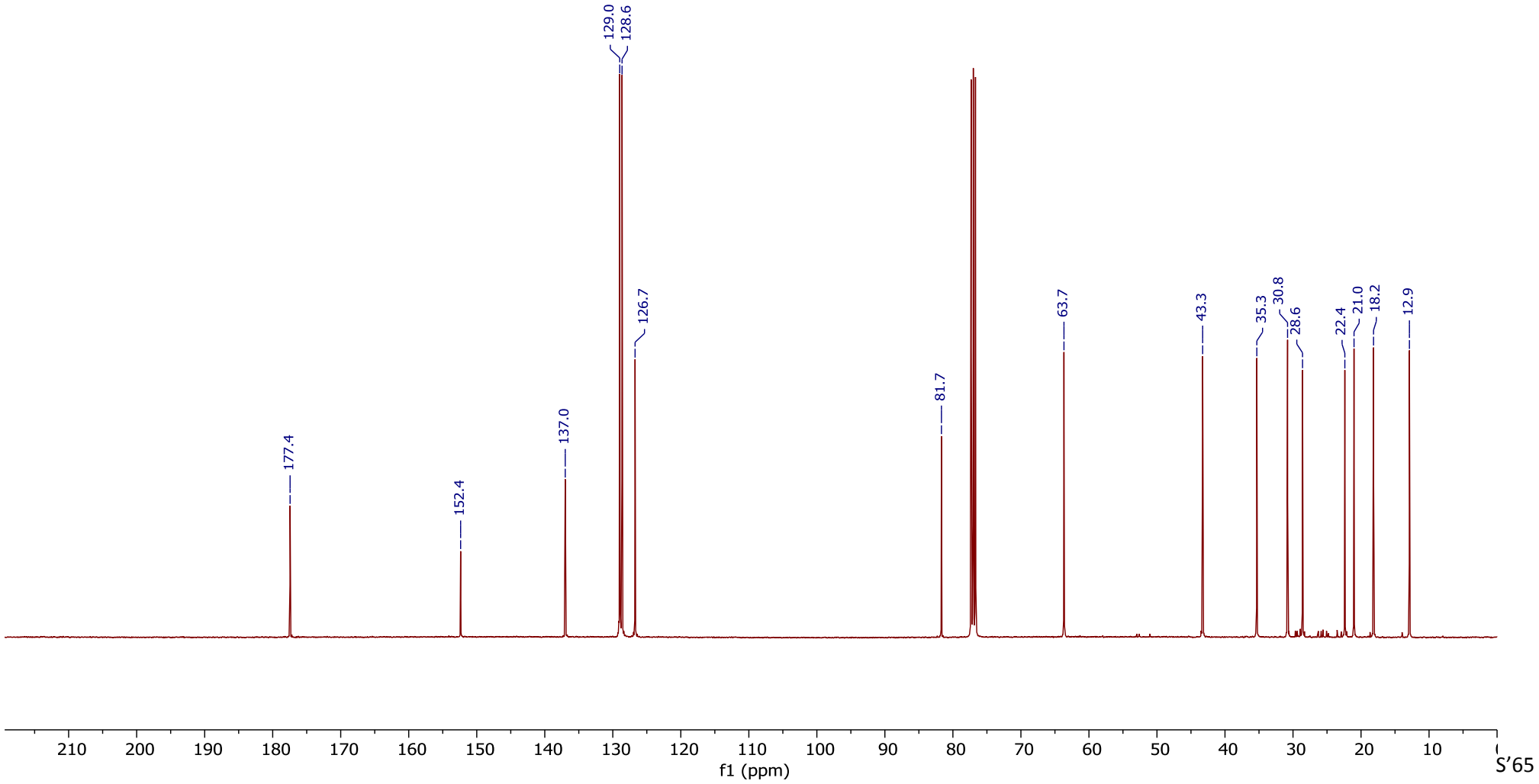
3e



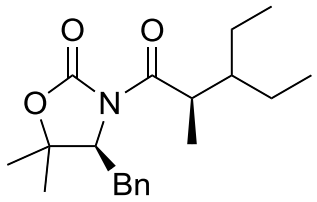
$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



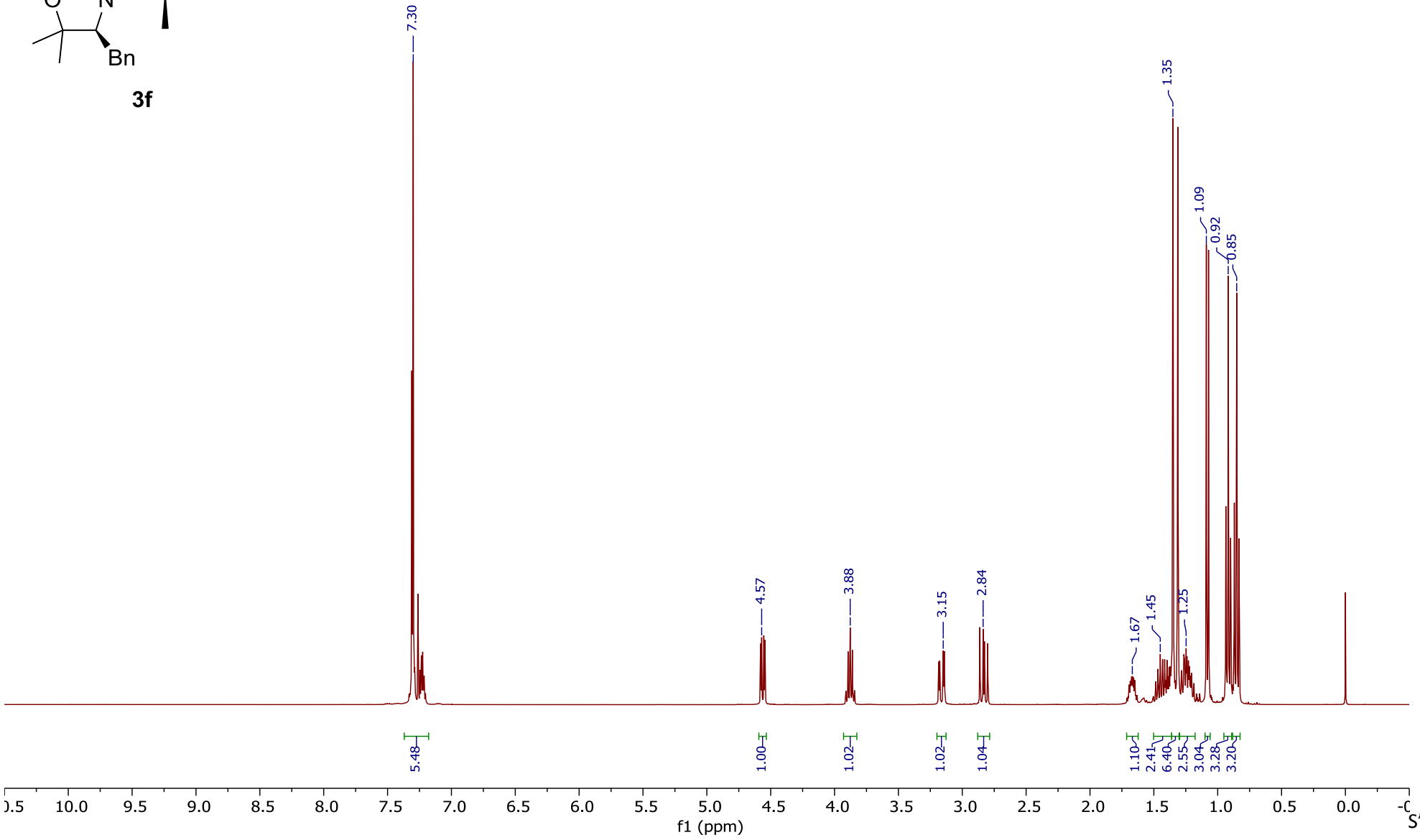
3e



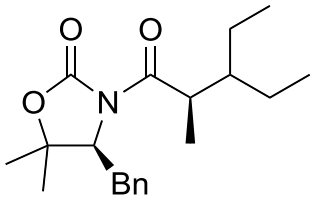
^{1}H NMR (400 MHz, $CDCl_3$)



3f

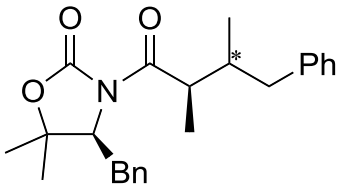


$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)

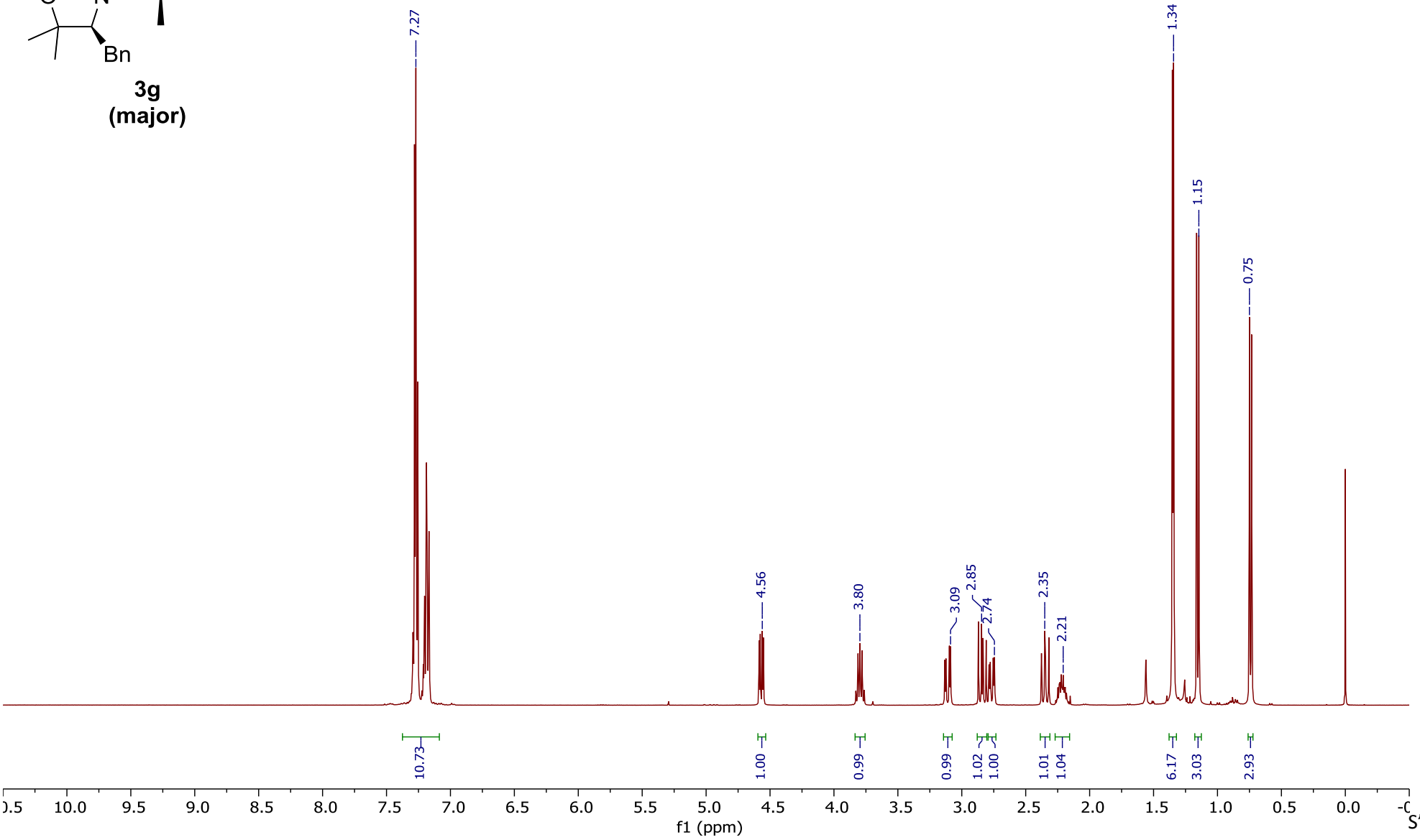


3f

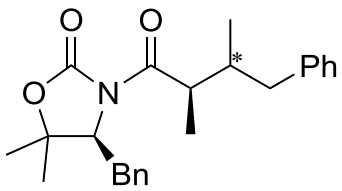
^{1}H NMR (400 MHz, $CDCl_3$)



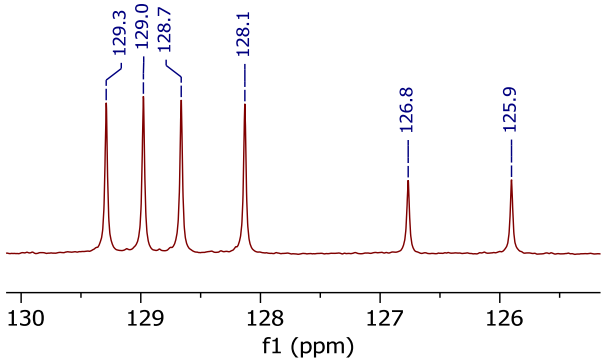
3g
(major)



$^{13}C\{^1H\}$ NMR (100.6 MHz, $CDCl_3$)



3g
(major)



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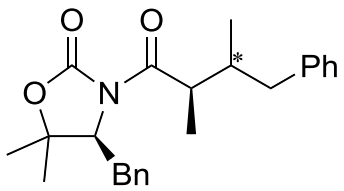
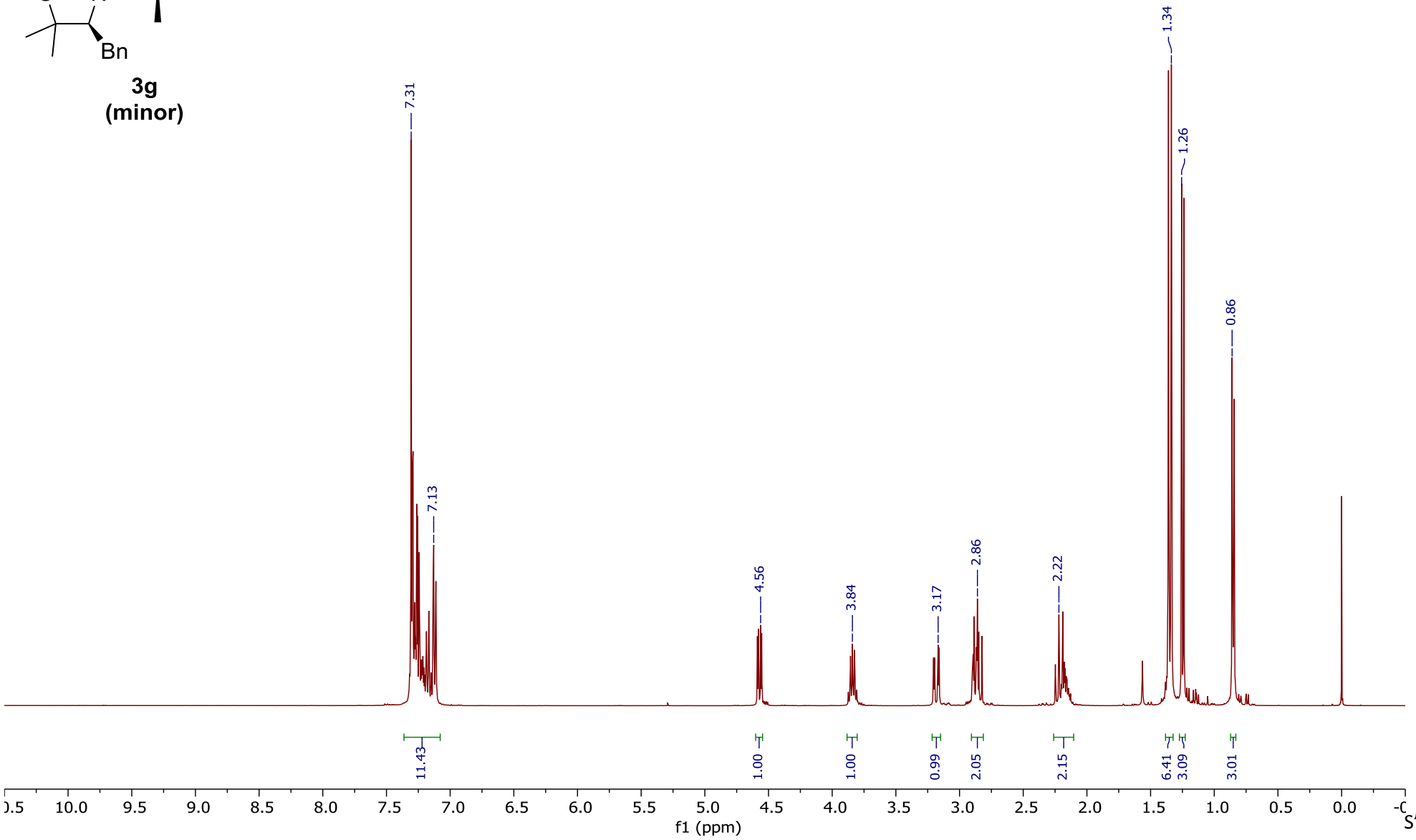
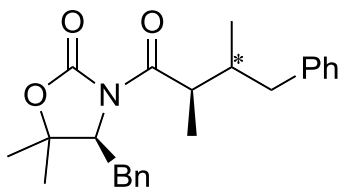


3g
(minor)

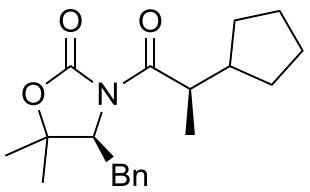


$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



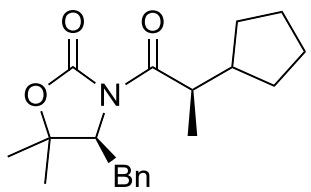
3g
(minor)

^{1}H NMR (400 MHz, $CDCl_3$)



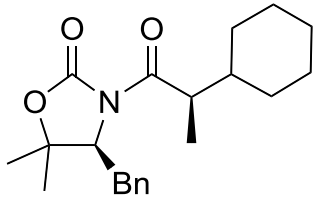
3h

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)

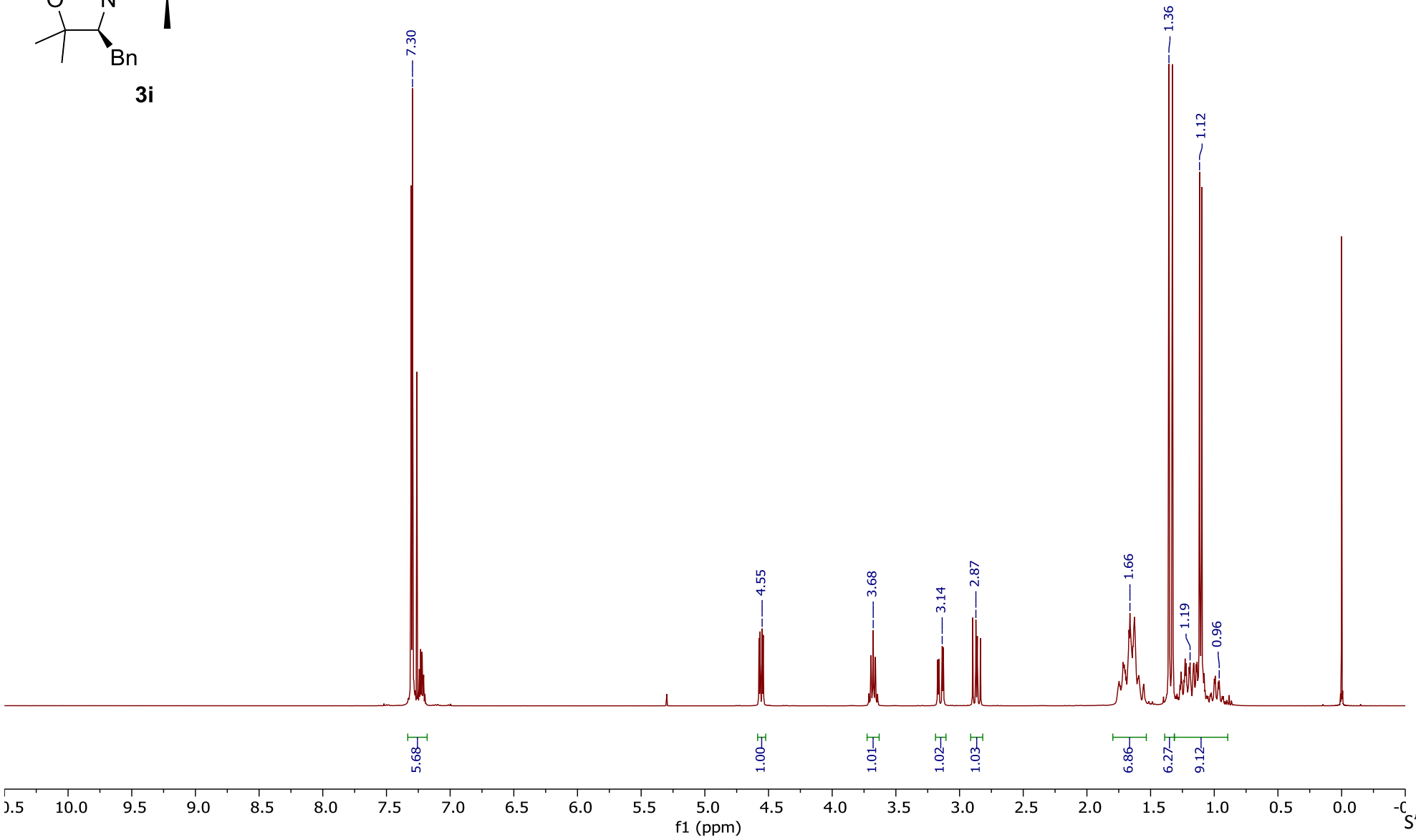


3h

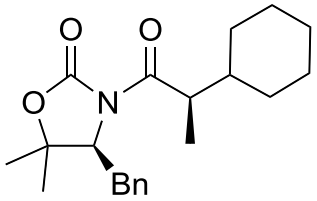
^{1}H NMR (400 MHz, $CDCl_3$)



3i



$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



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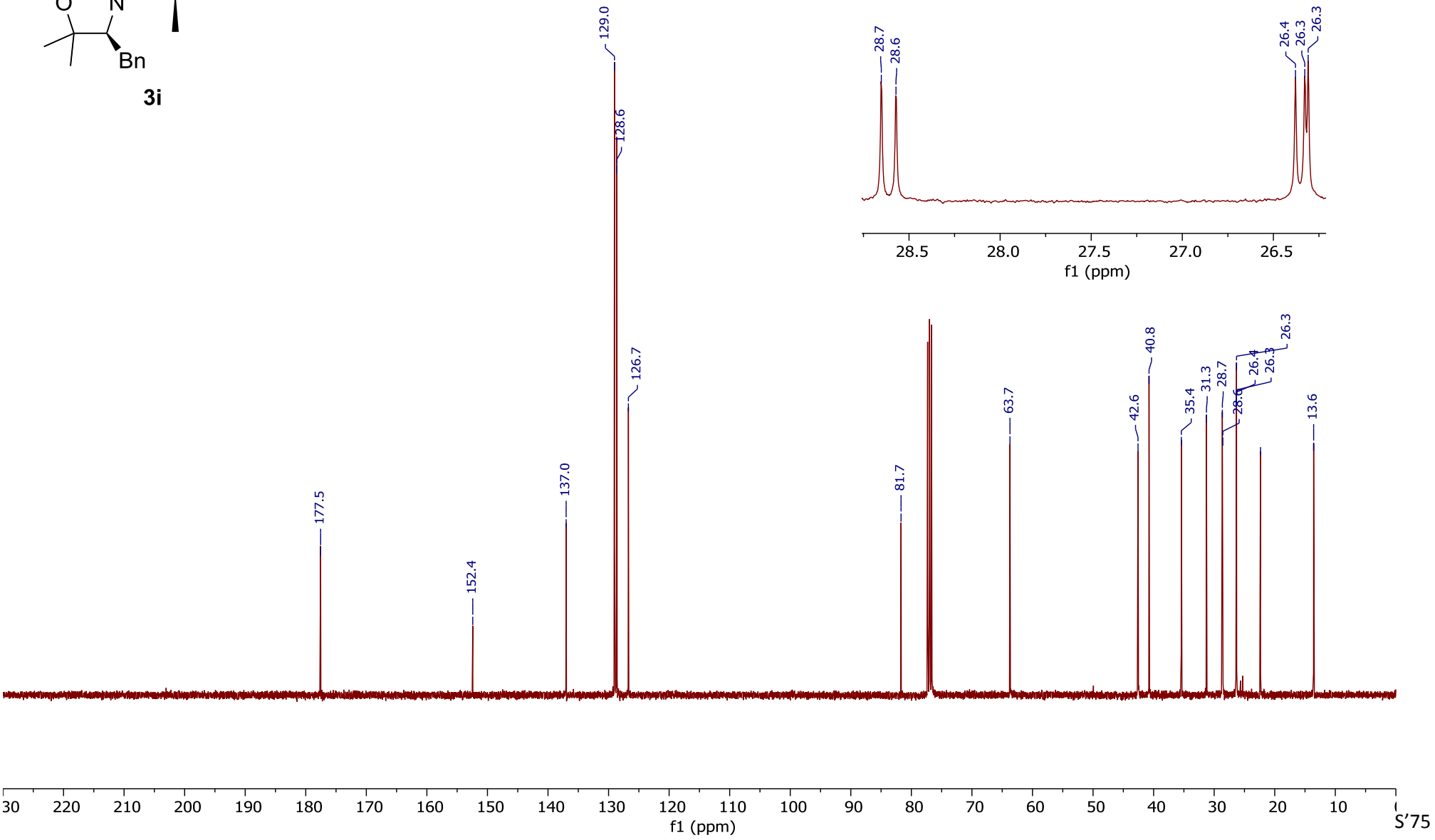
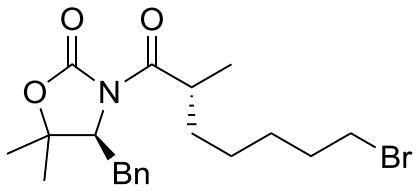
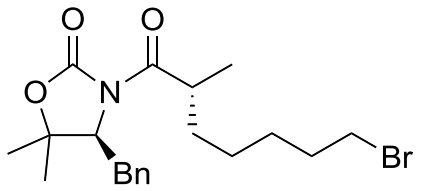


^{1}H NMR (400 MHz, $CDCl_3$)

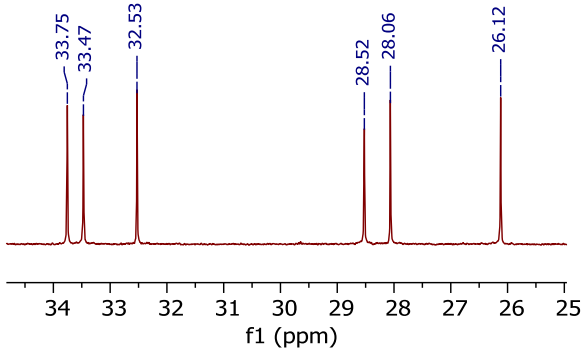


3j

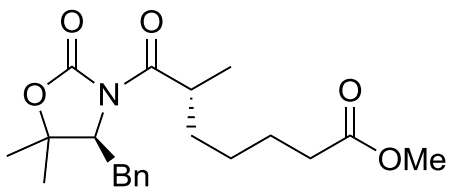
$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



3j

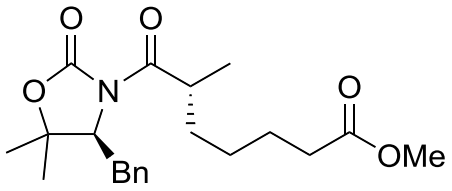


^{1}H NMR (400 MHz, $CDCl_3$)



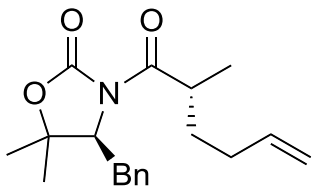
3k

$^{13}C\{^1H\}$ NMR (100.6 MHz, $CDCl_3$)



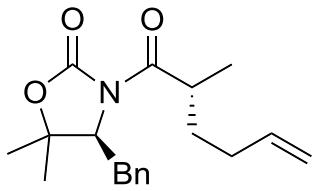
3k

^{1}H NMR (400 MHz, $CDCl_3$)



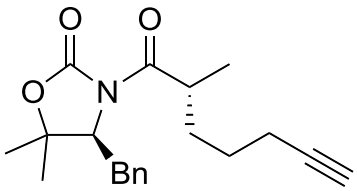
3l

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



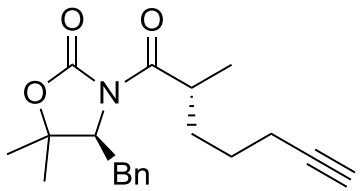
3l

^{1}H NMR (400 MHz, $CDCl_3$)



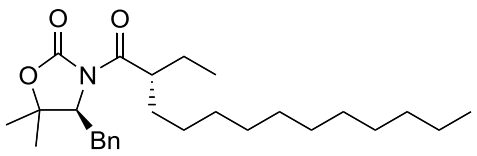
3m

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)

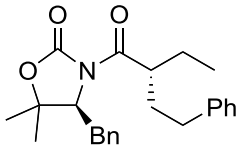


3m

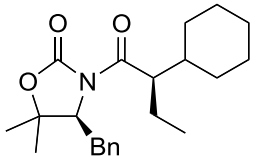
5. ALKYLATION PRODUCTS (TABLE 2)



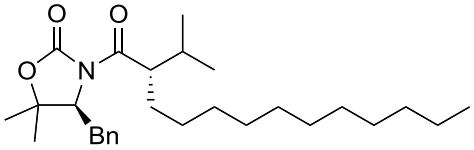
15a



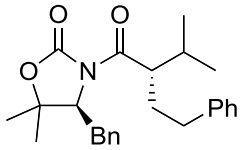
15c



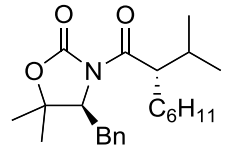
15i



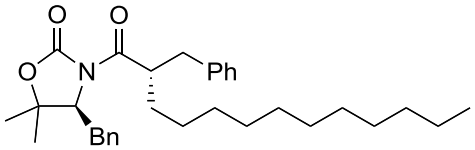
16a



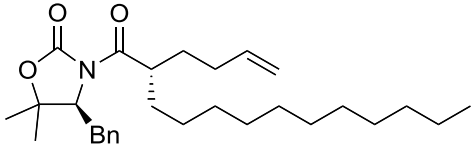
16c



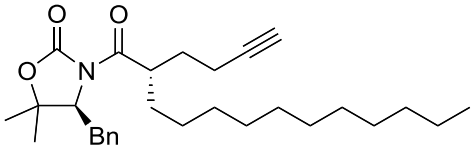
16i



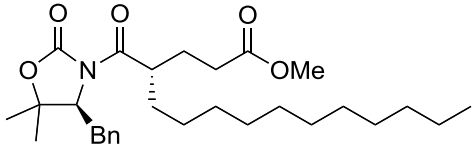
17a



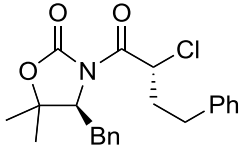
18a



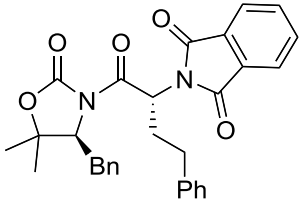
19a



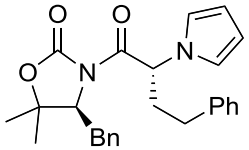
20a



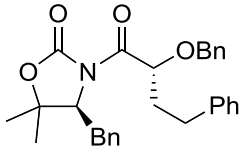
21c



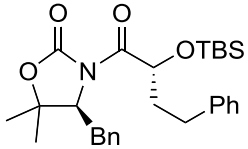
22c



23c

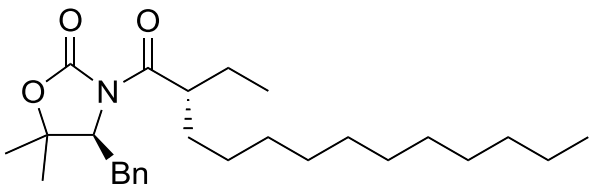


24c



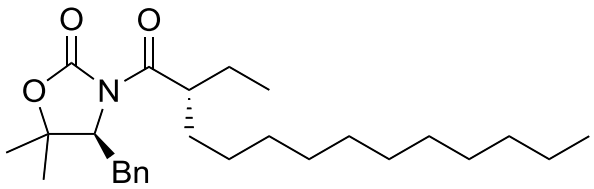
25c

^{1}H NMR (400 MHz, $CDCl_3$)



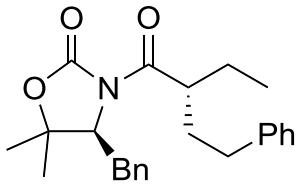
15a

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



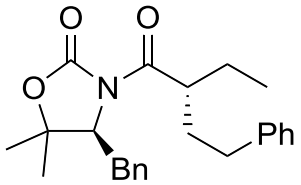
15a

^{1}H NMR (400 MHz, $CDCl_3$)



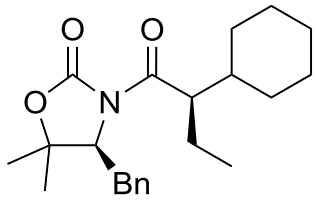
15c

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)

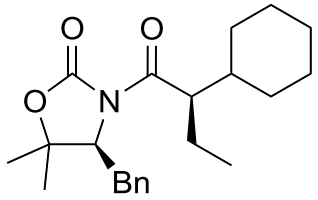


15c

^{1}H NMR (400 MHz, $CDCl_3$)



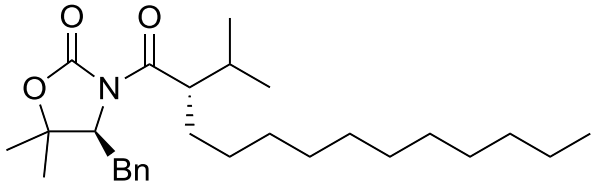
15i


O
O
O
N
Bn

15i

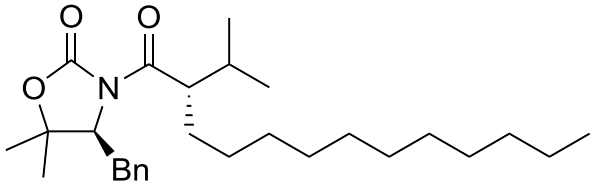
176.9
152.5
137.1
129.0
128.6
126.7
81.5
63.8
49.5
40.6
35.6
31.1
29.5
28.4
26.4
26.3
22.2
22.0
11.9
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
f1 (ppm)

^{1}H NMR (400 MHz, $CDCl_3$)



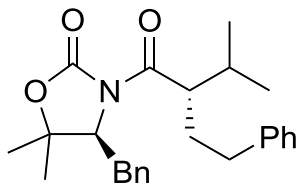
16a

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



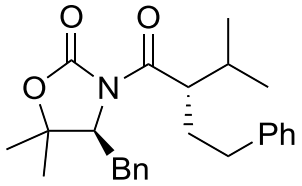
16a

^{1}H NMR (400 MHz, $CDCl_3$)



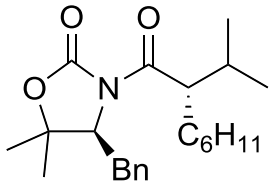
16c

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)

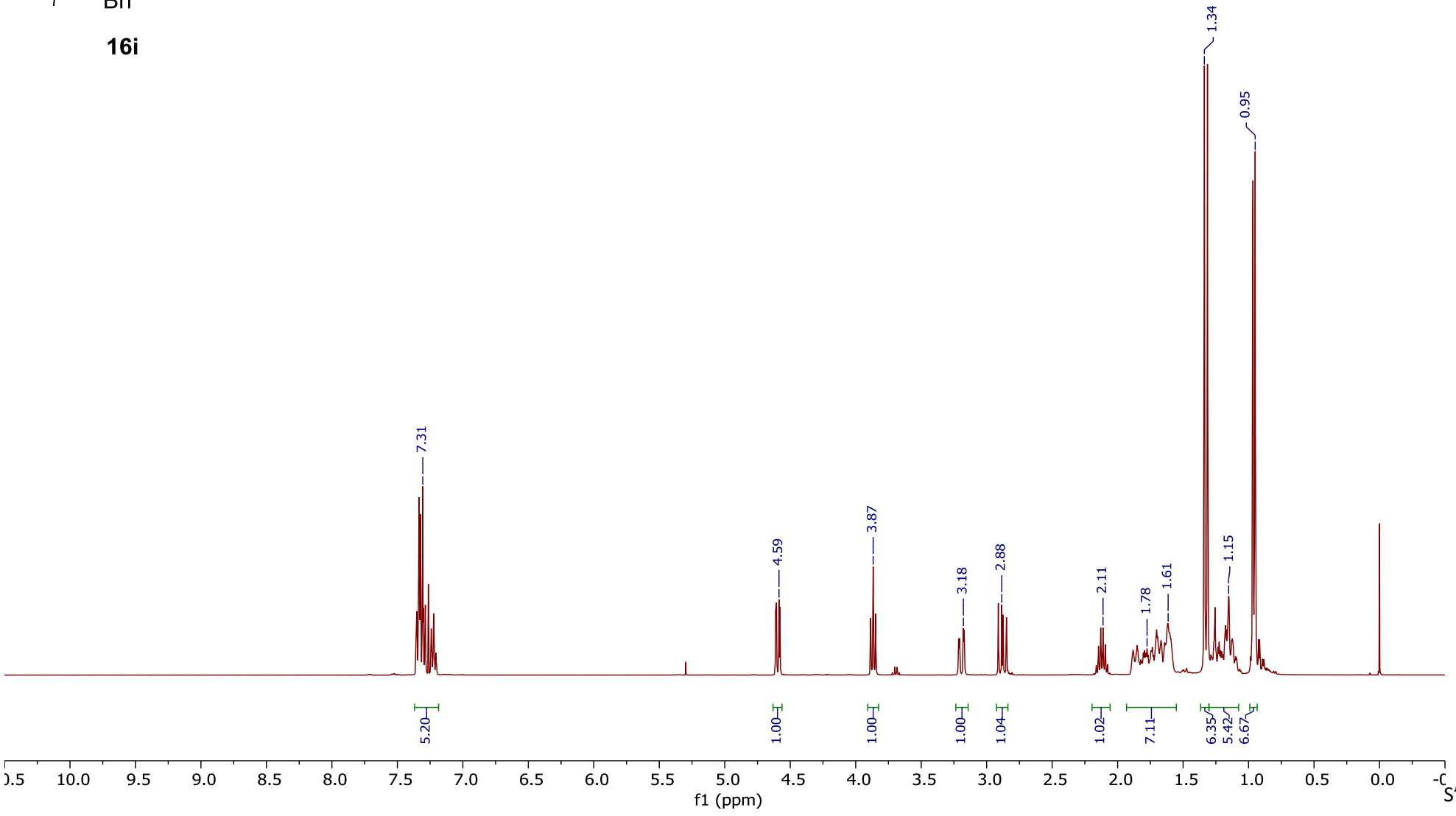


16c

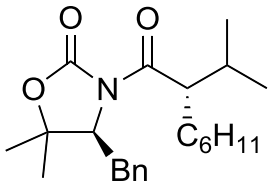
^{1}H NMR (400 MHz, $CDCl_3$)



16i

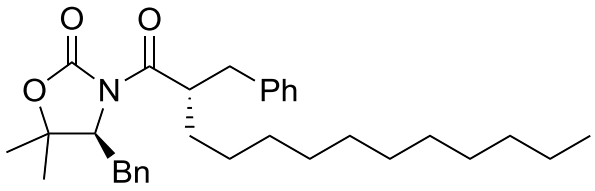


$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



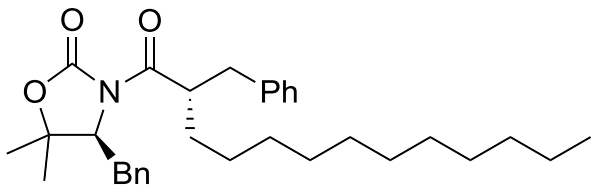
16i

^{1}H NMR (400 MHz, $CDCl_3$)



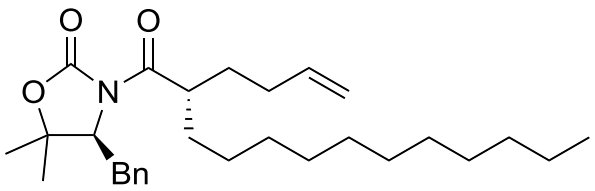
17a

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



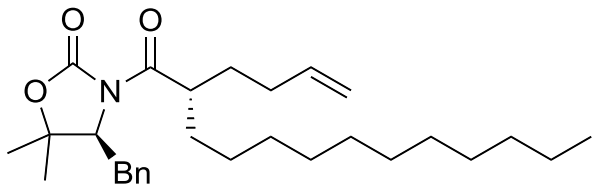
17a

^{1}H NMR (400 MHz, $CDCl_3$)



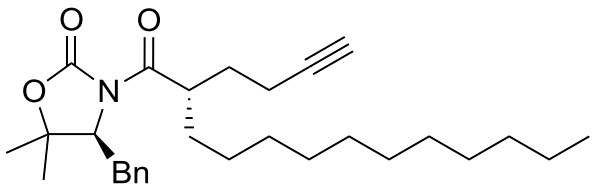
18a

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



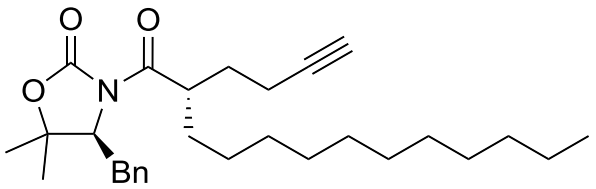
18a

^{1}H NMR (400 MHz, $CDCl_3$)



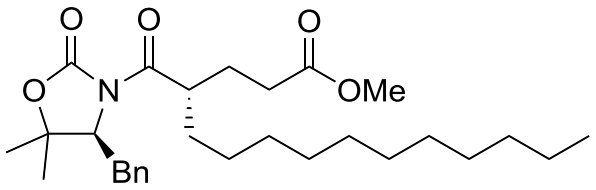
19a

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



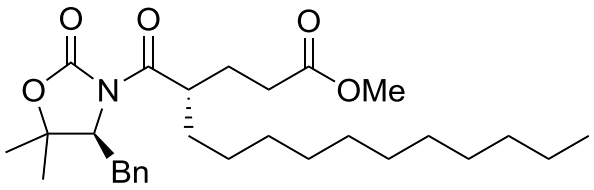
19a

^{1}H NMR (400 MHz, $CDCl_3$)



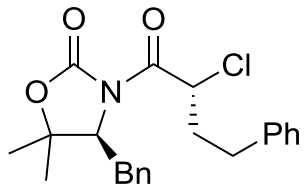
20a

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



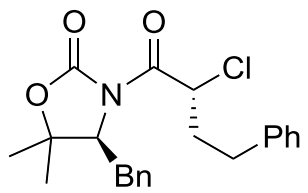
20a

^{1}H NMR (400 MHz, $CDCl_3$)



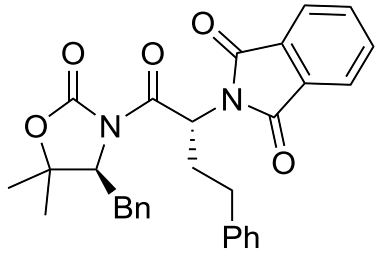
21c

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



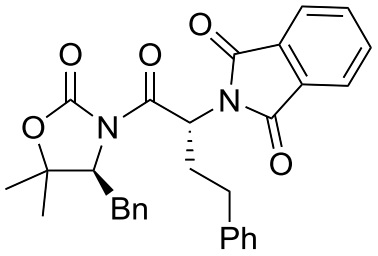
21c

^{1}H NMR (400 MHz, $CDCl_3$)

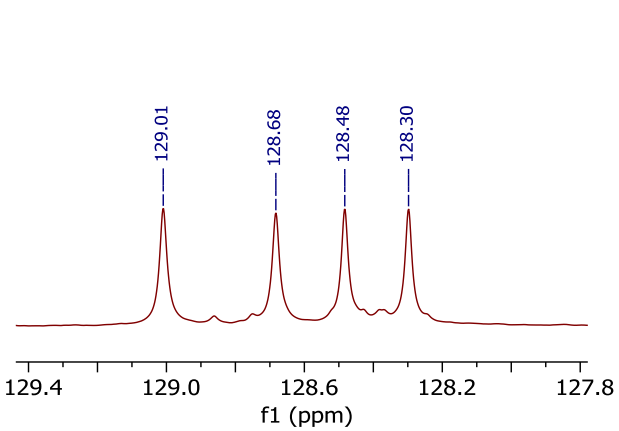


22c

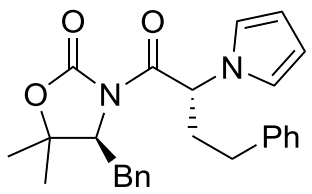
$^{13}C\{^1H\}$ NMR (100.6 MHz, $CDCl_3$)



22c

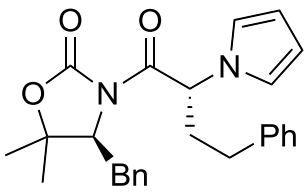


^{1}H NMR (400 MHz, $CDCl_3$)

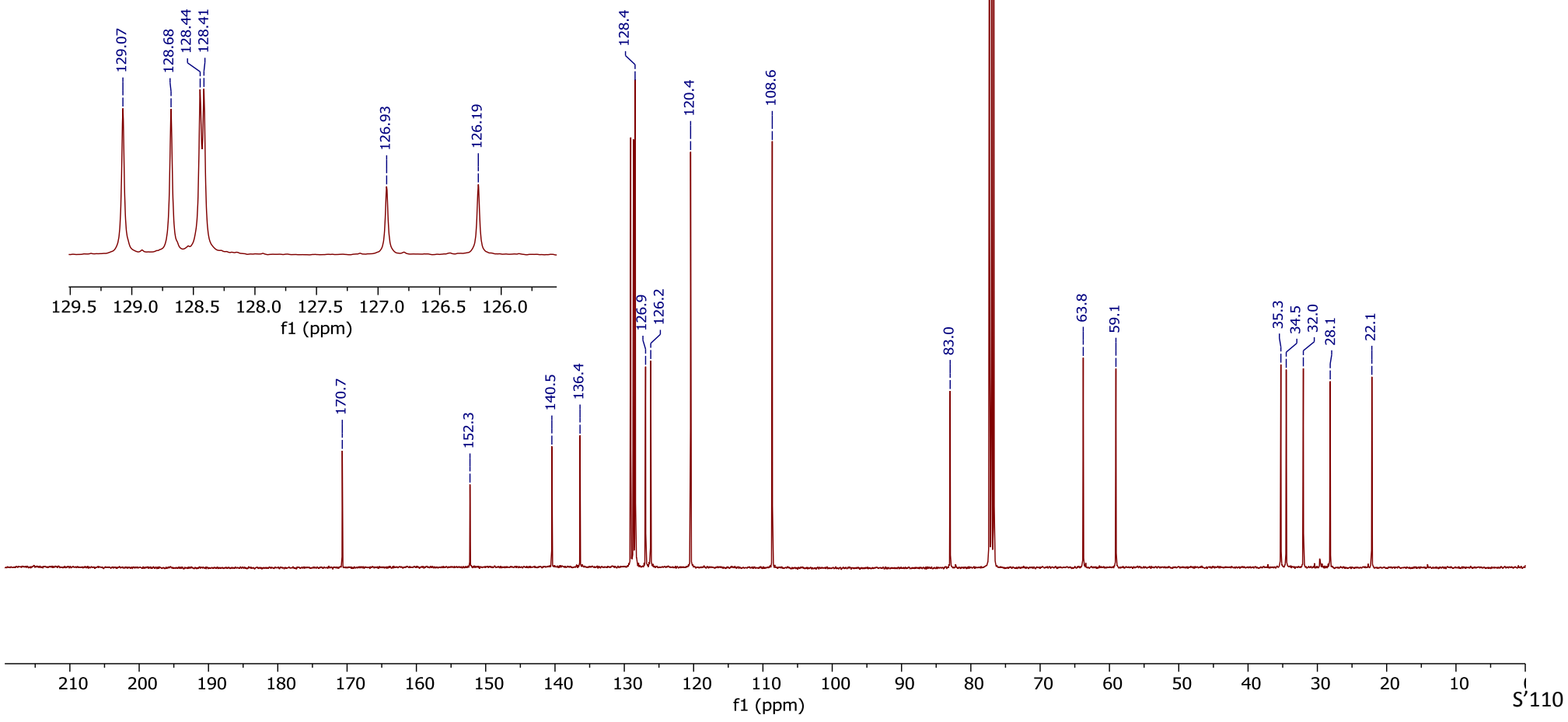


23c

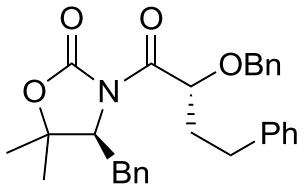
$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



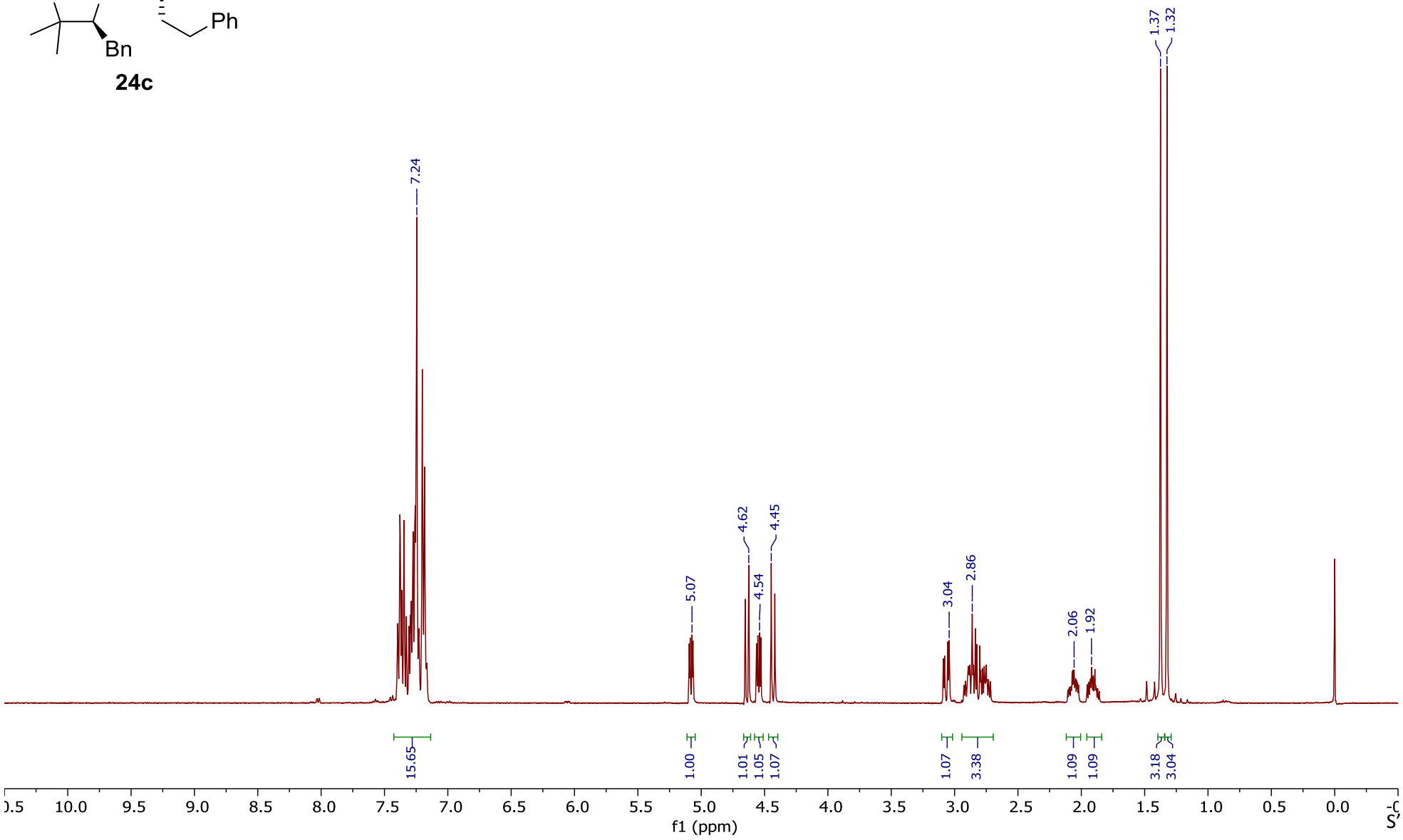
23c



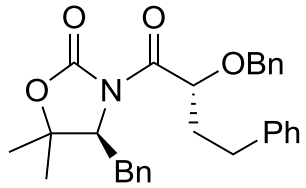
^{1}H NMR (400 MHz, $CDCl_3$)



24c

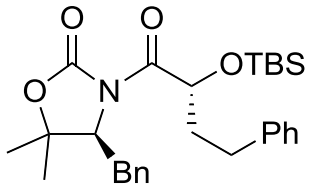


$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



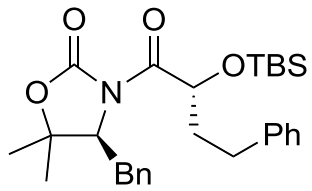
24c

^{1}H NMR (400 MHz, $CDCl_3$)



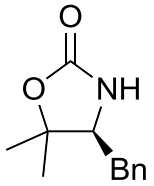
25c

$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)

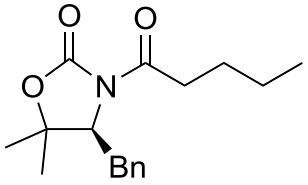


25c

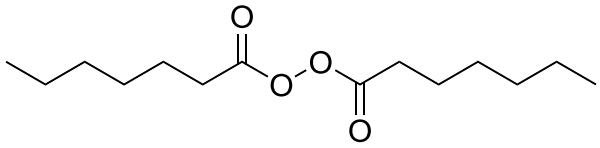
6. ARUNDIC ACID SYNTHESIS



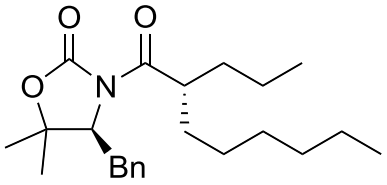
27



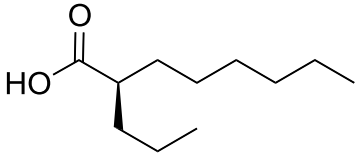
28



o

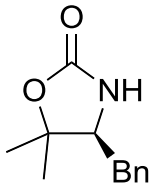


29o

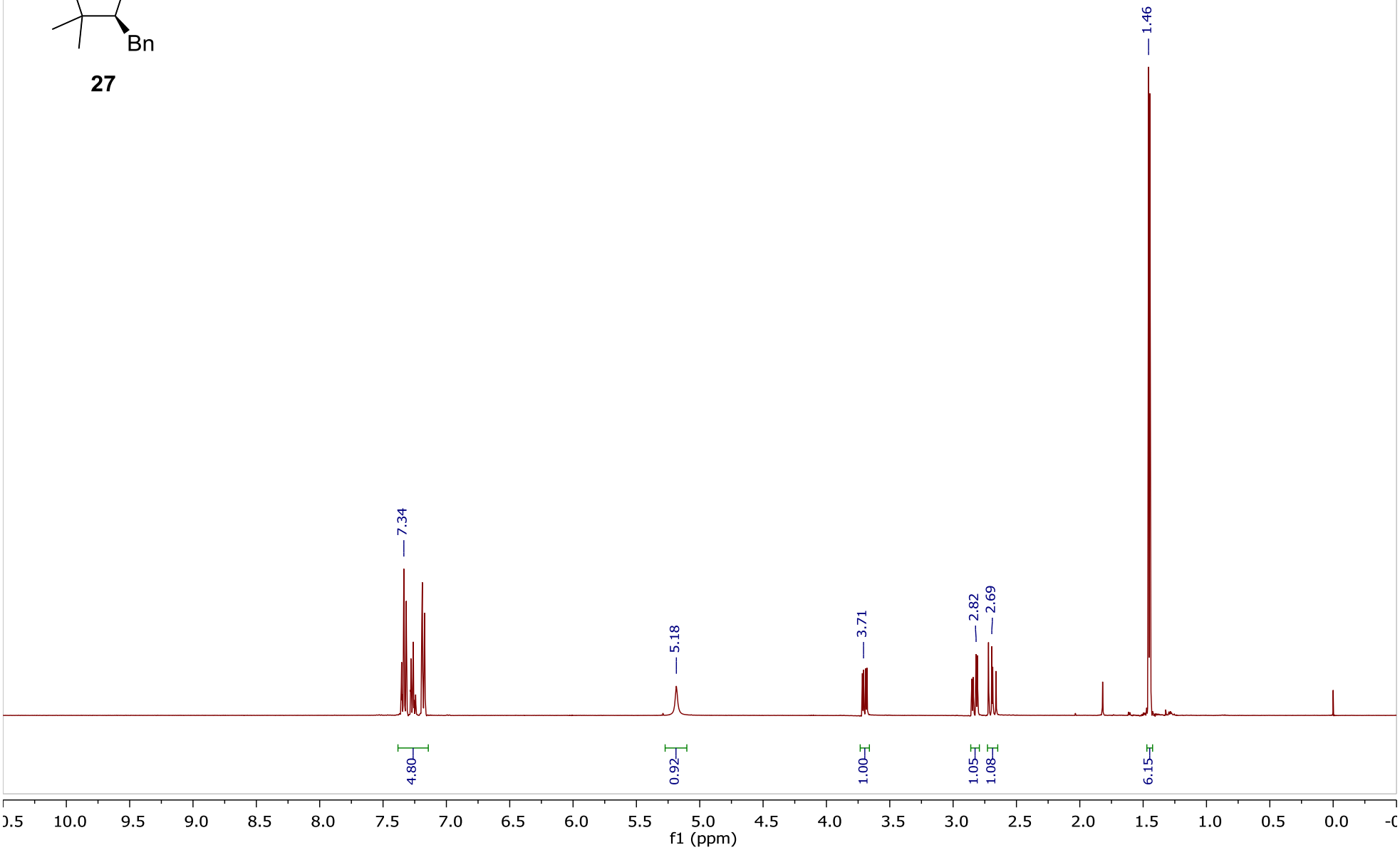


26

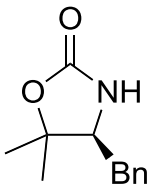
^{1}H NMR (400 MHz, $CDCl_3$)



27



$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



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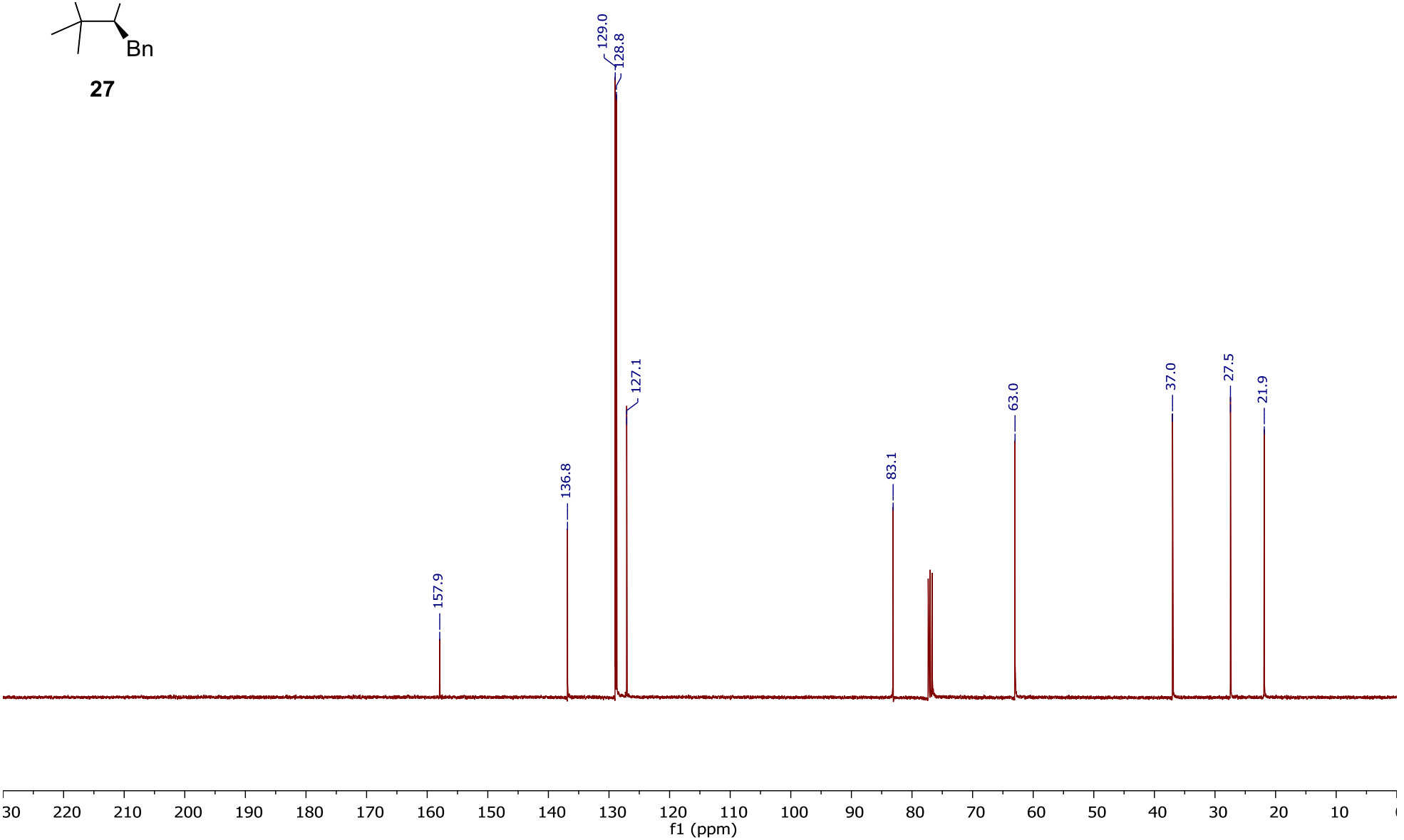
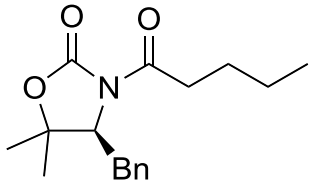


^{1}H NMR (400 MHz, $CDCl_3$)



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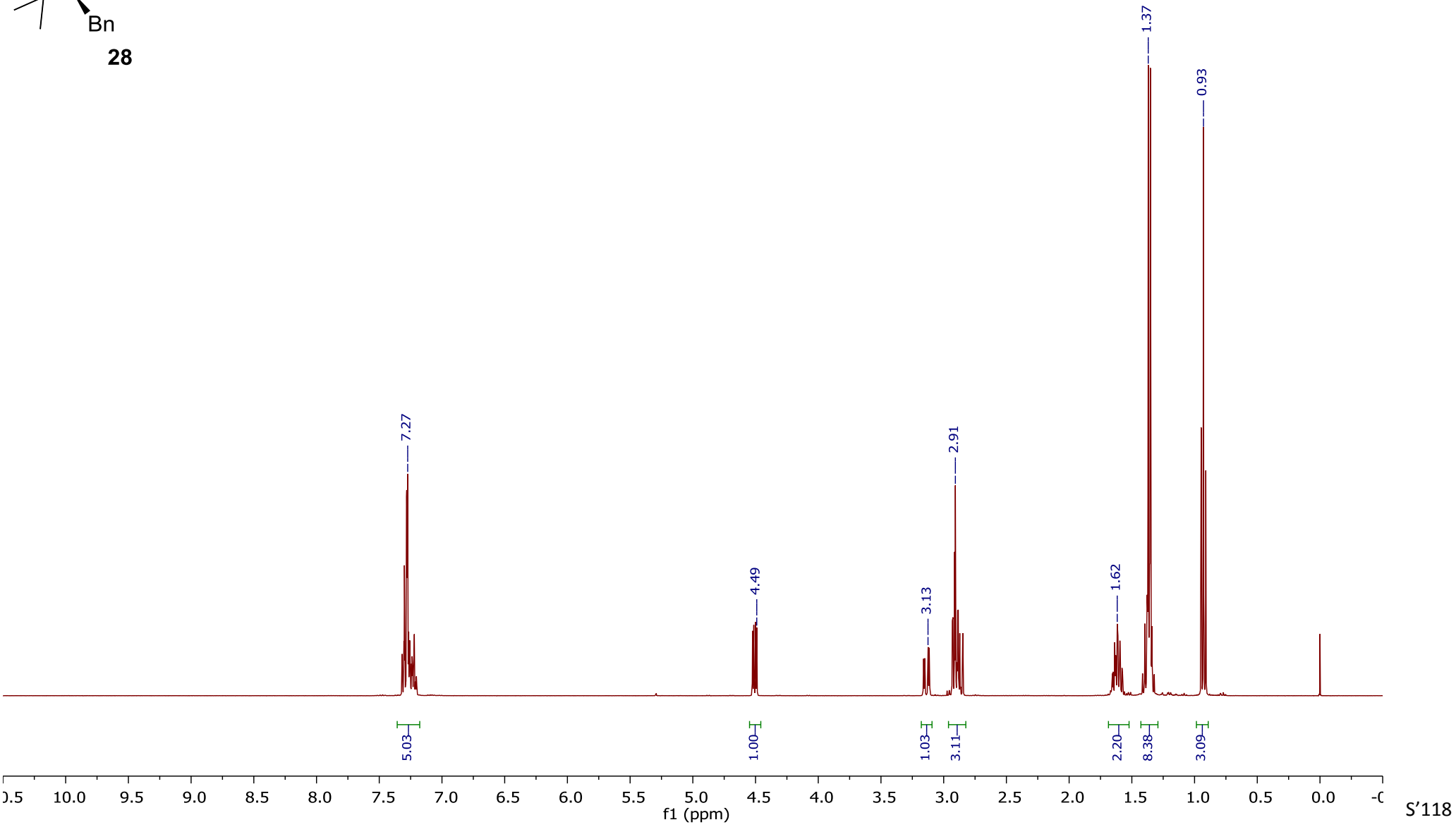
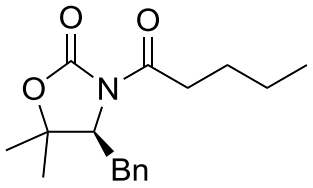
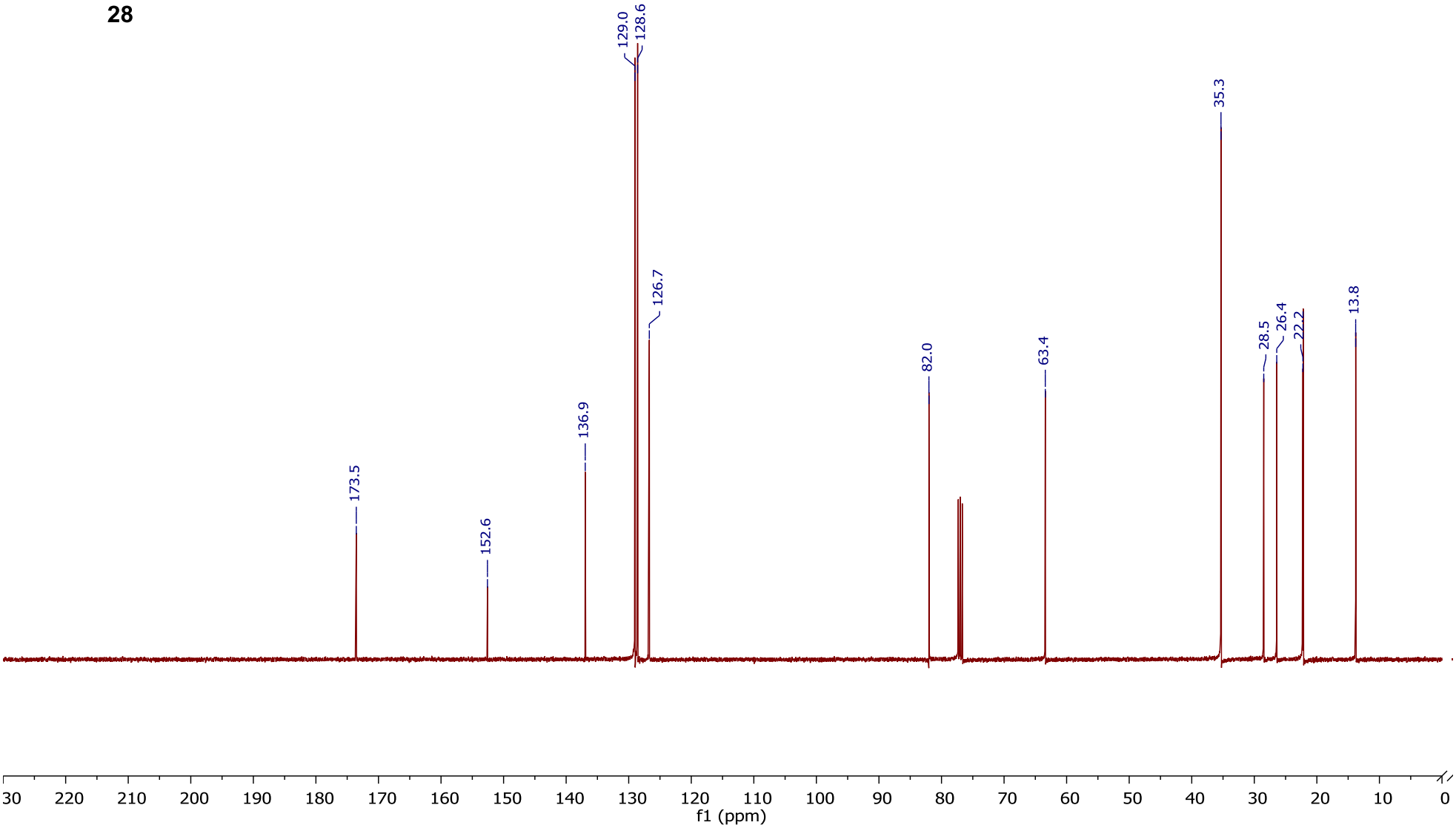


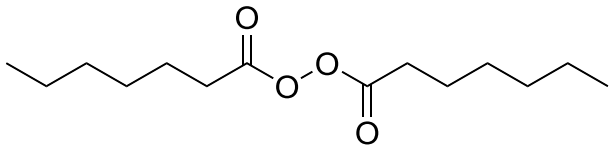
$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



28



^{1}H NMR (400 MHz, $CDCl_3$)



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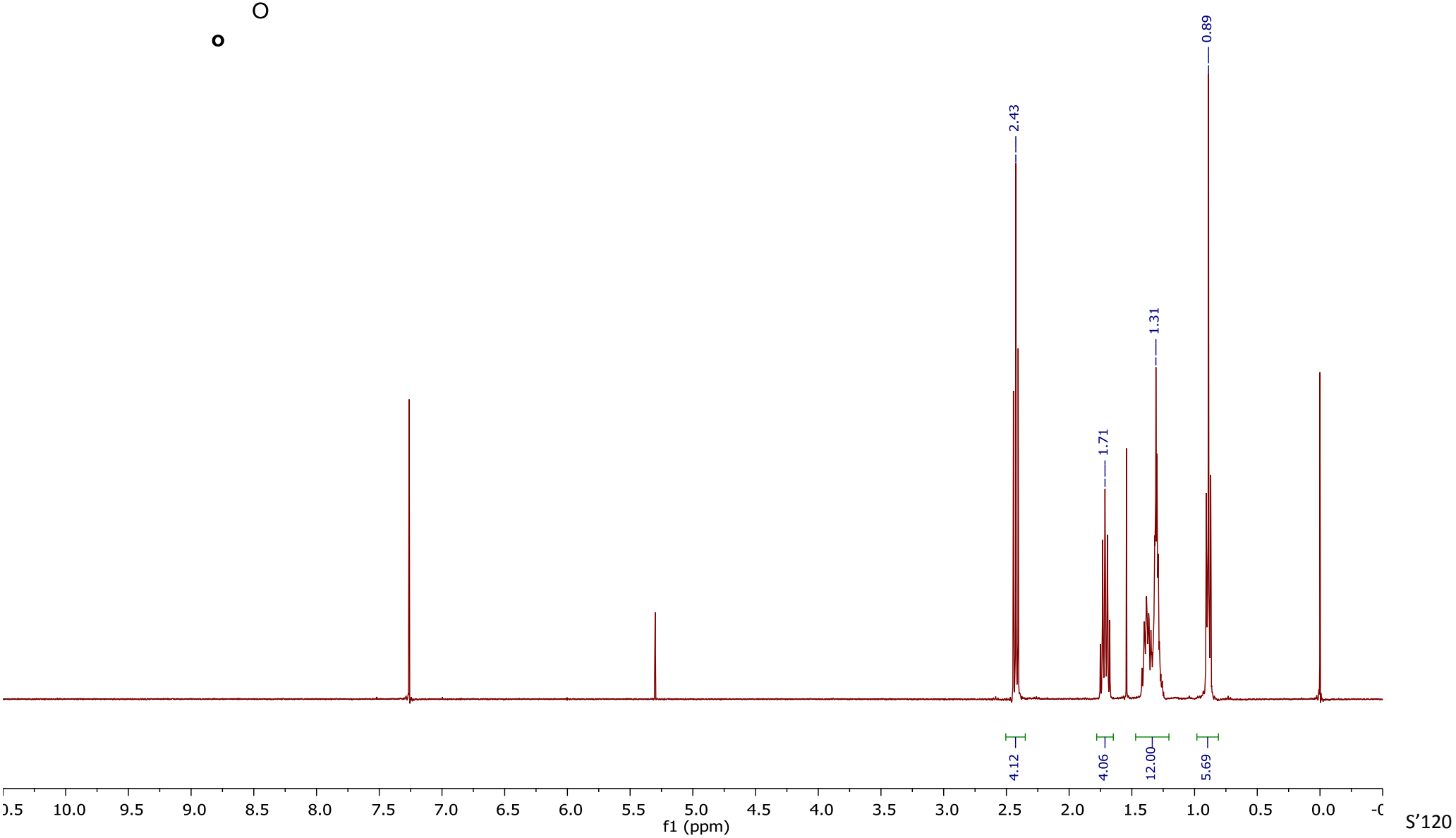
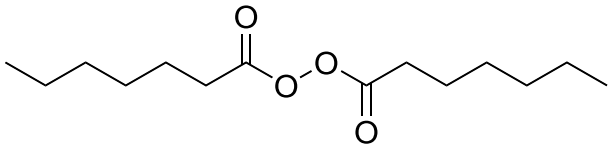
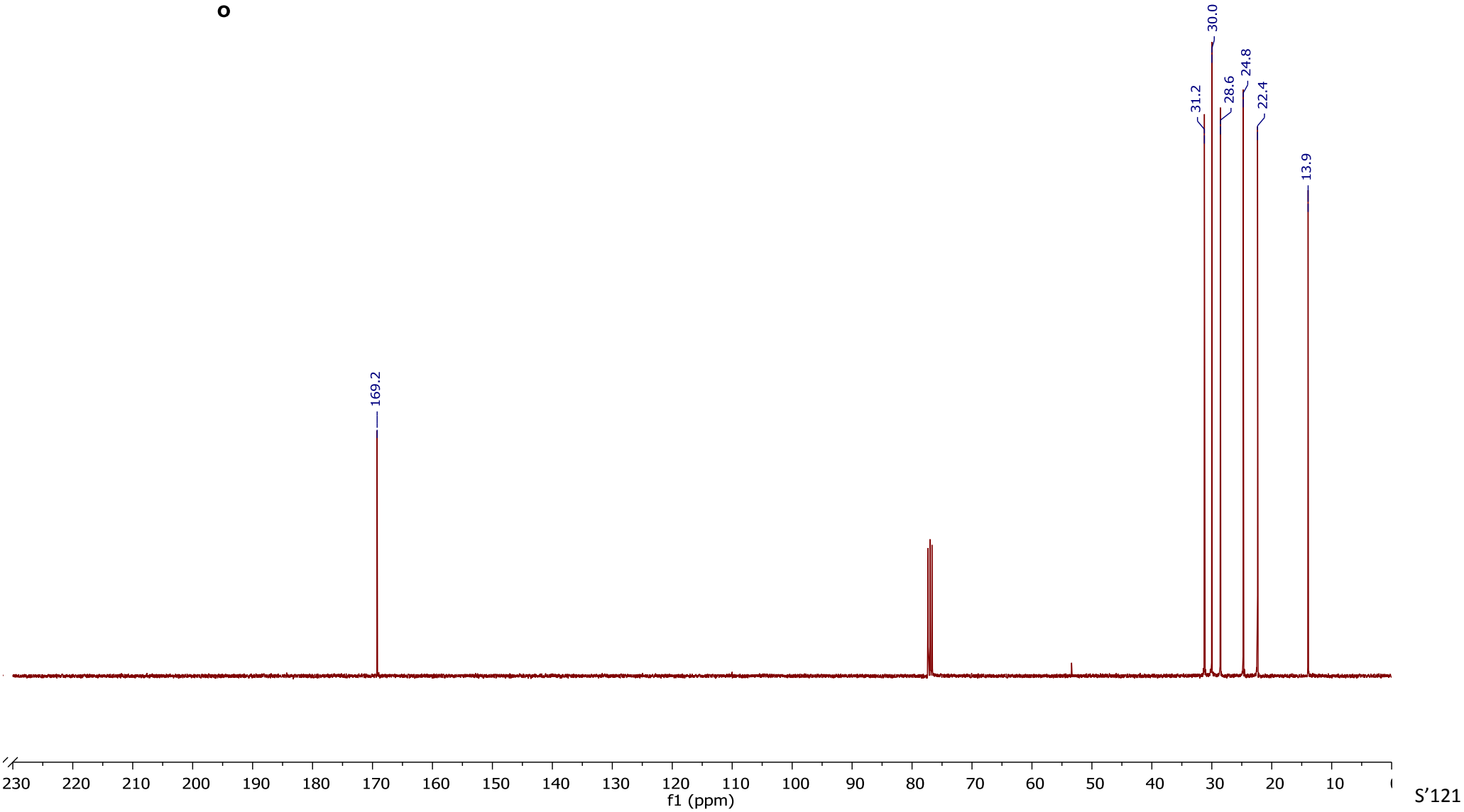


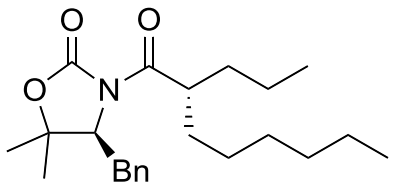
$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



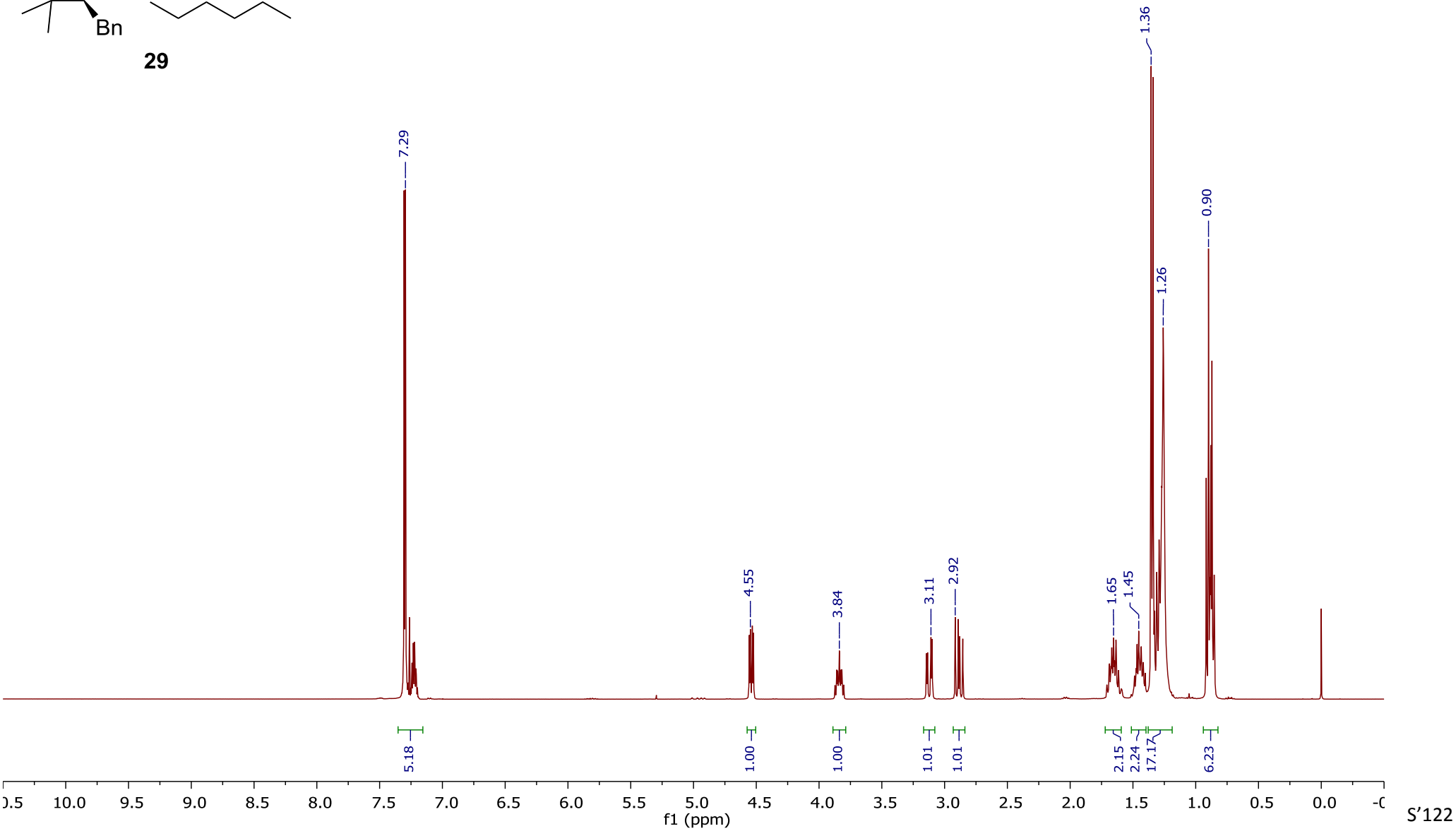
o



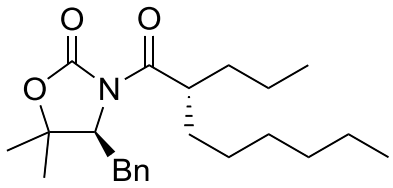
^{1}H NMR (400 MHz, $CDCl_3$)



29

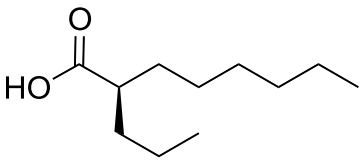


$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)

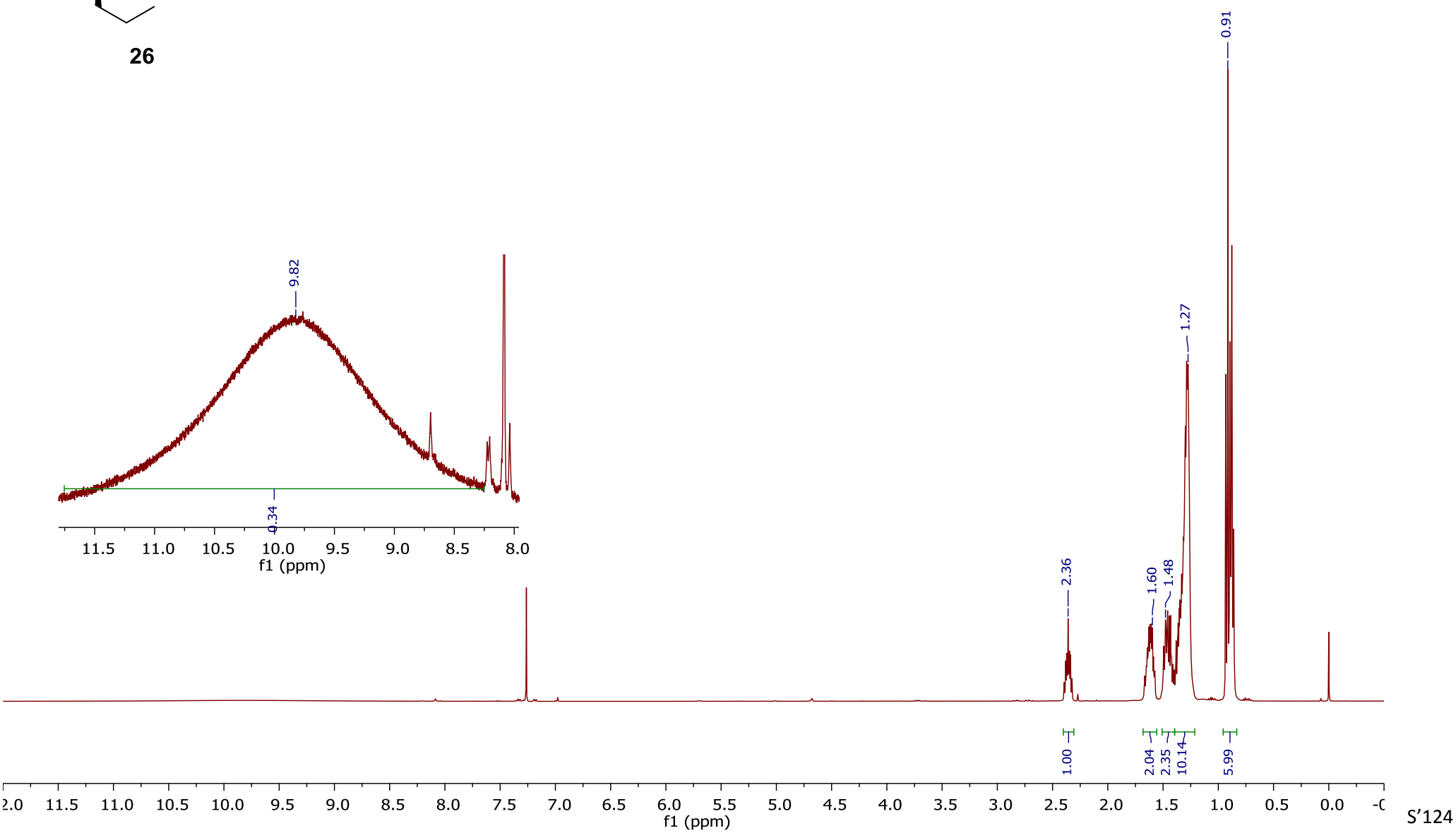


29o

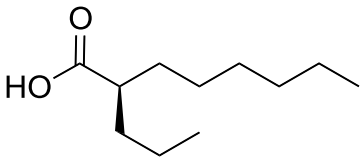
^{1}H NMR (400 MHz, $CDCl_3$)



26



$^{13}C\{^{1}H\}$ NMR (100.6 MHz, $CDCl_3$)



26