

**Synthesis of Functionalized 5-Substituted Thiazolidine-2-thiones via Adscititious
Xanthates-Promoted Radical Cyclization of Allyl(alkyl/aryl)dithiocarbamates**

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Science, Beijing University of Chemical Technology, Beijing 100029, People's Republic of China.*

Email: jxu@mail.buct.edu.cn (JX Xu) and chenning@mail.buct.edu.cn (N Chen)

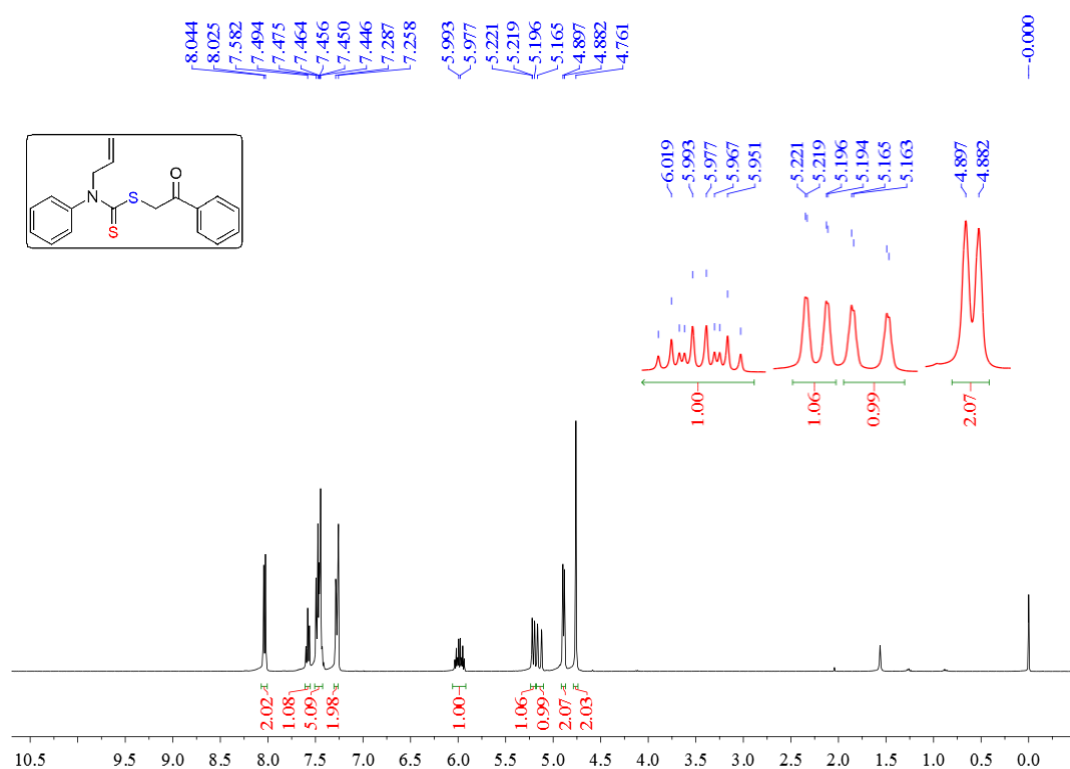
Electronic Supporting Information

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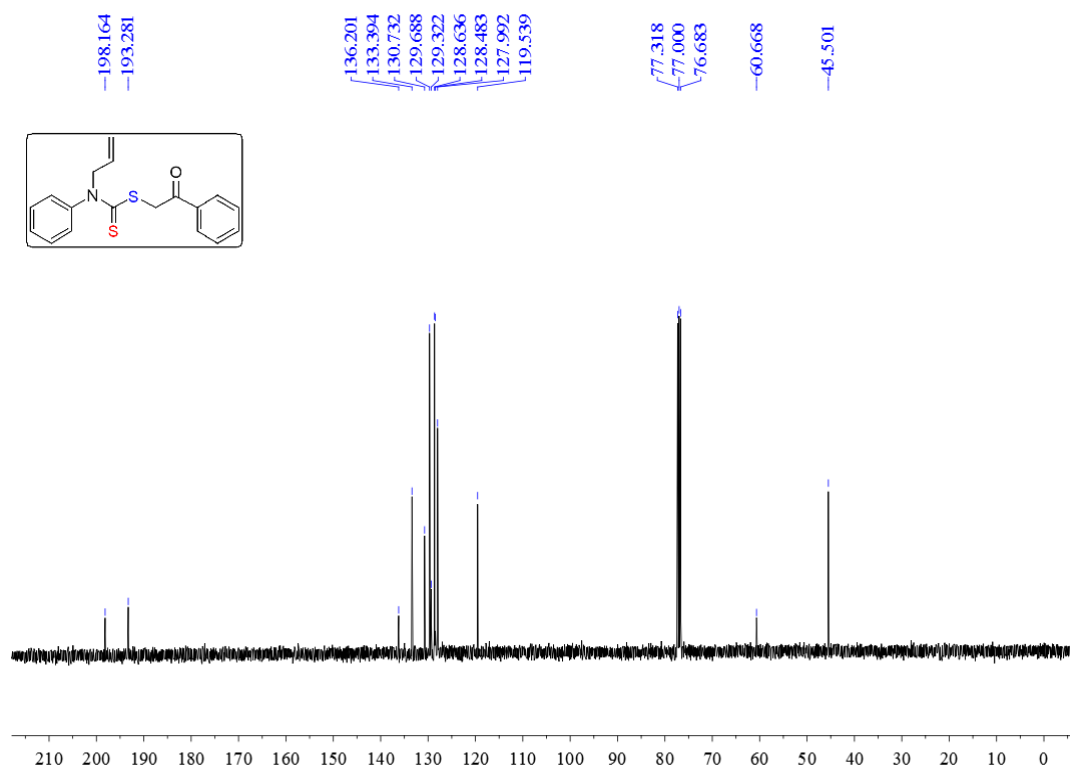
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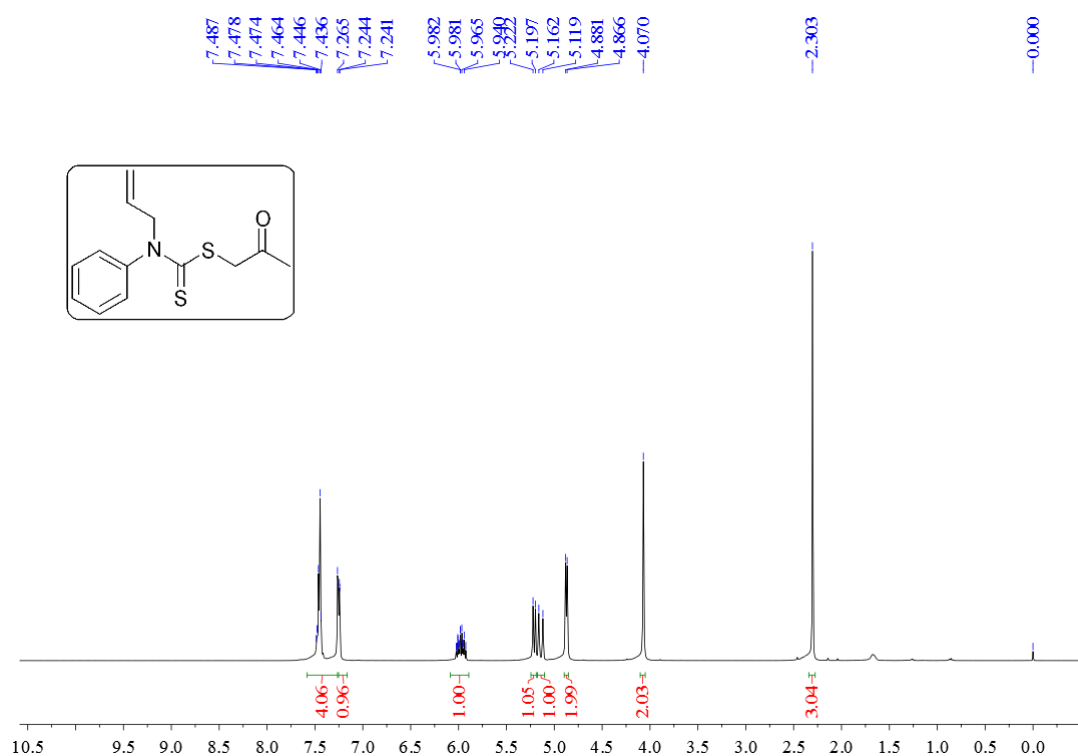
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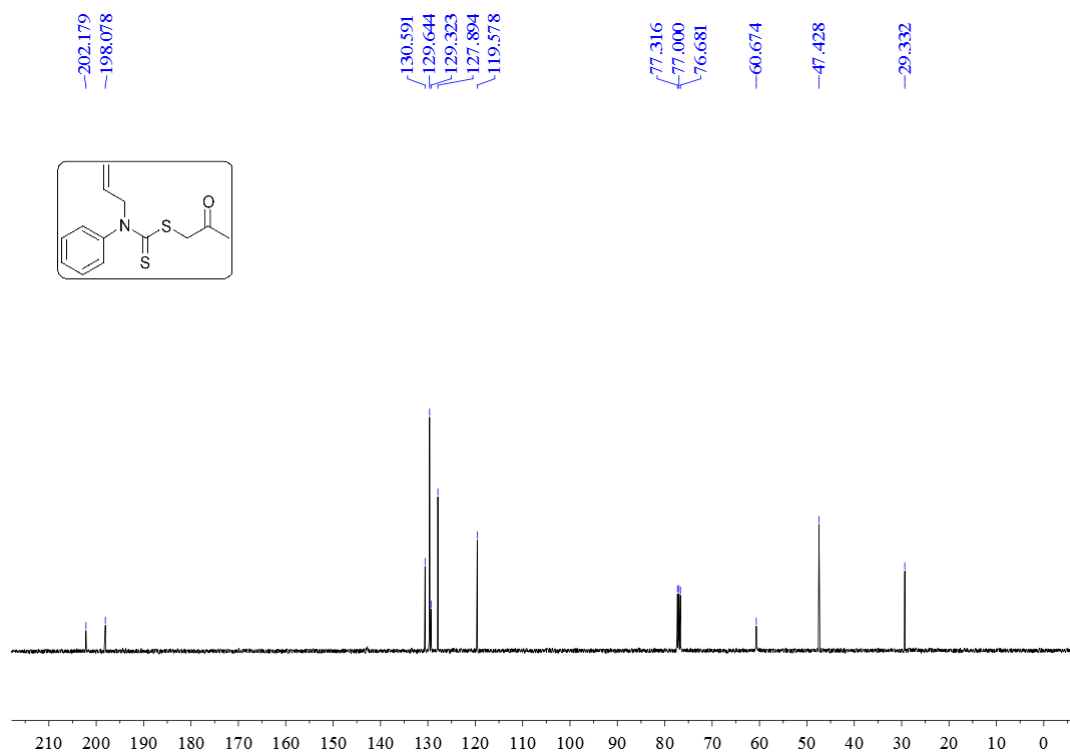
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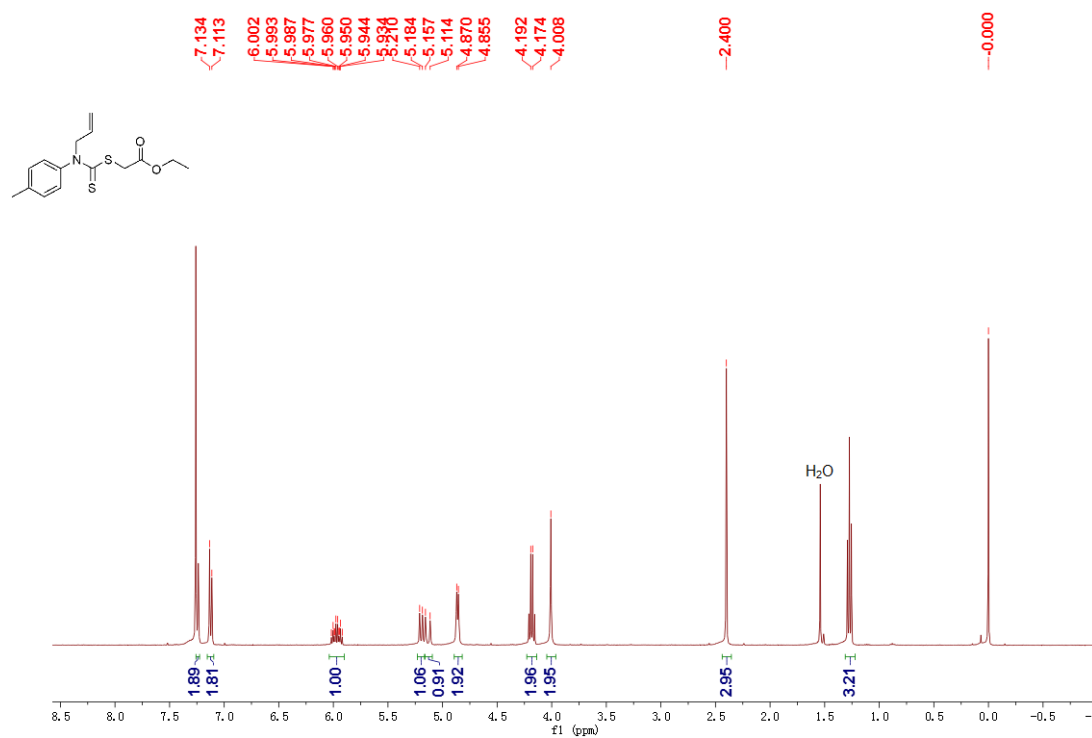
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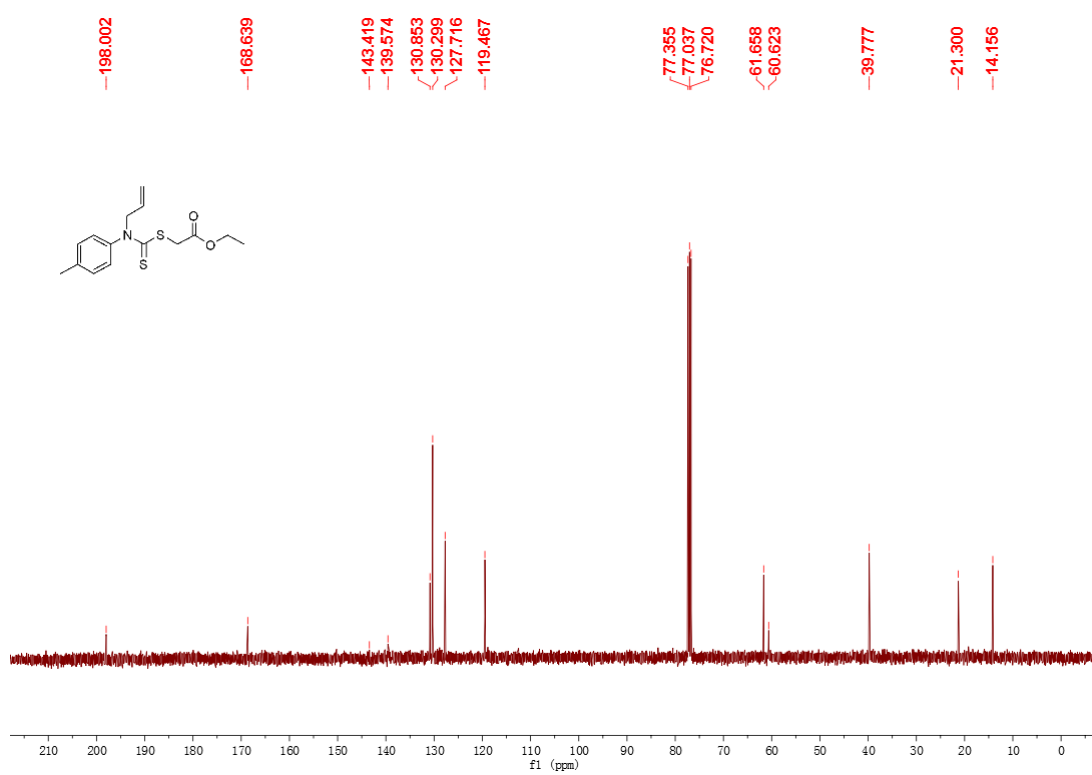
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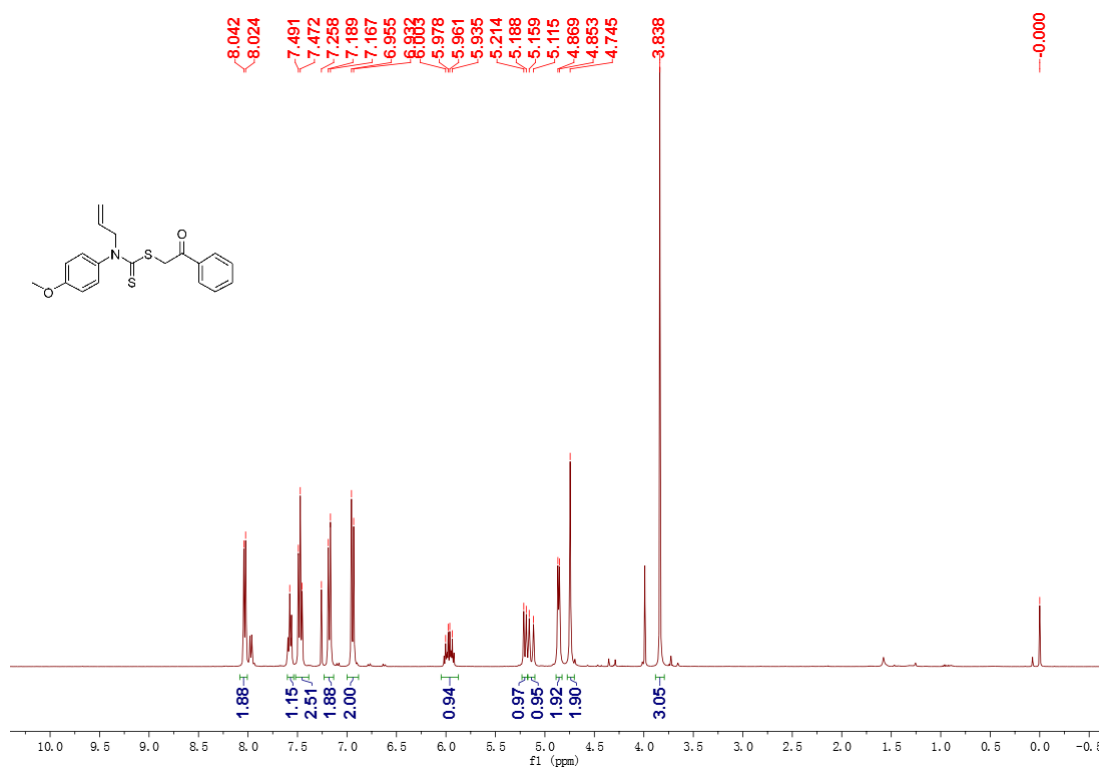
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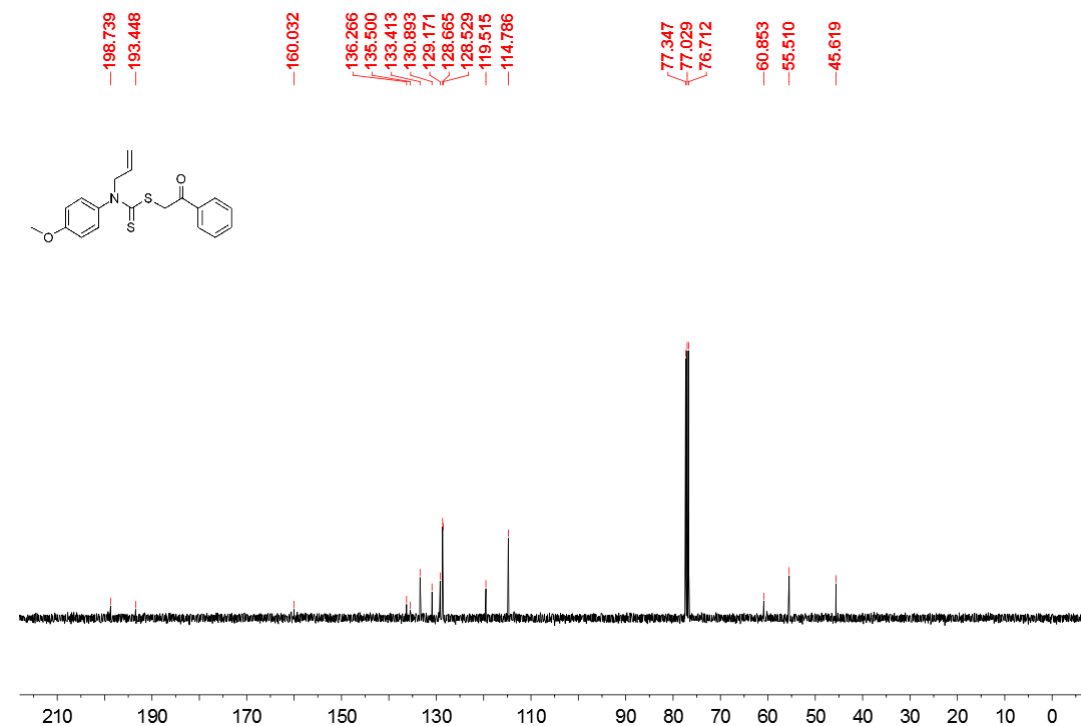
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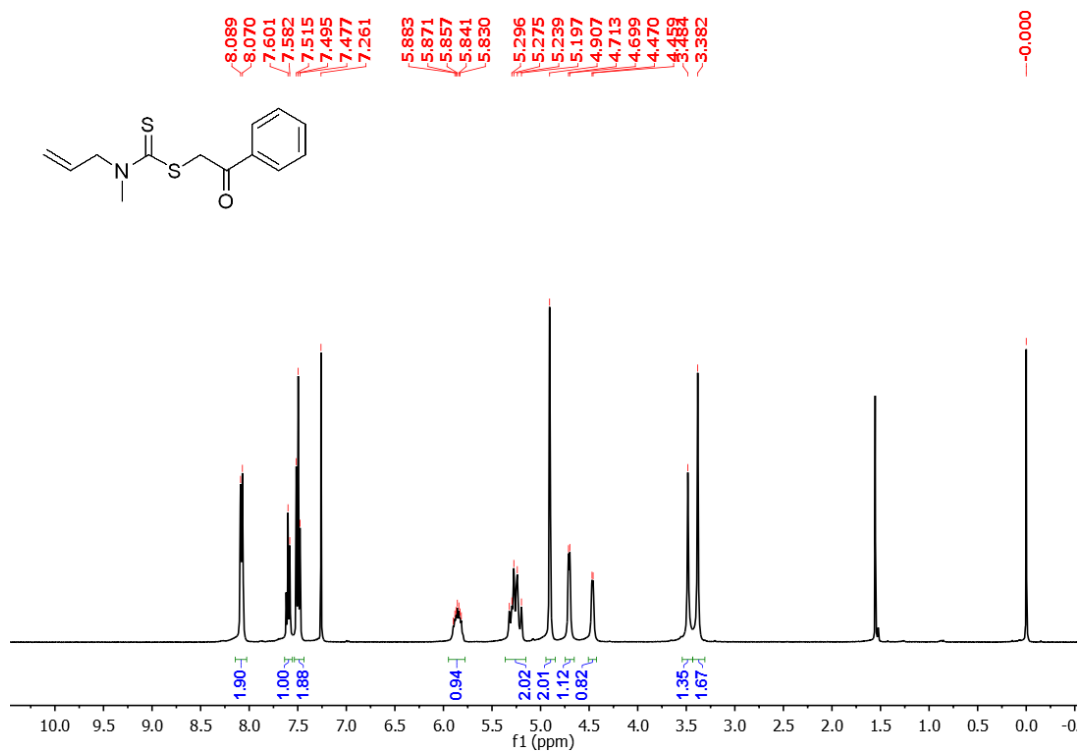
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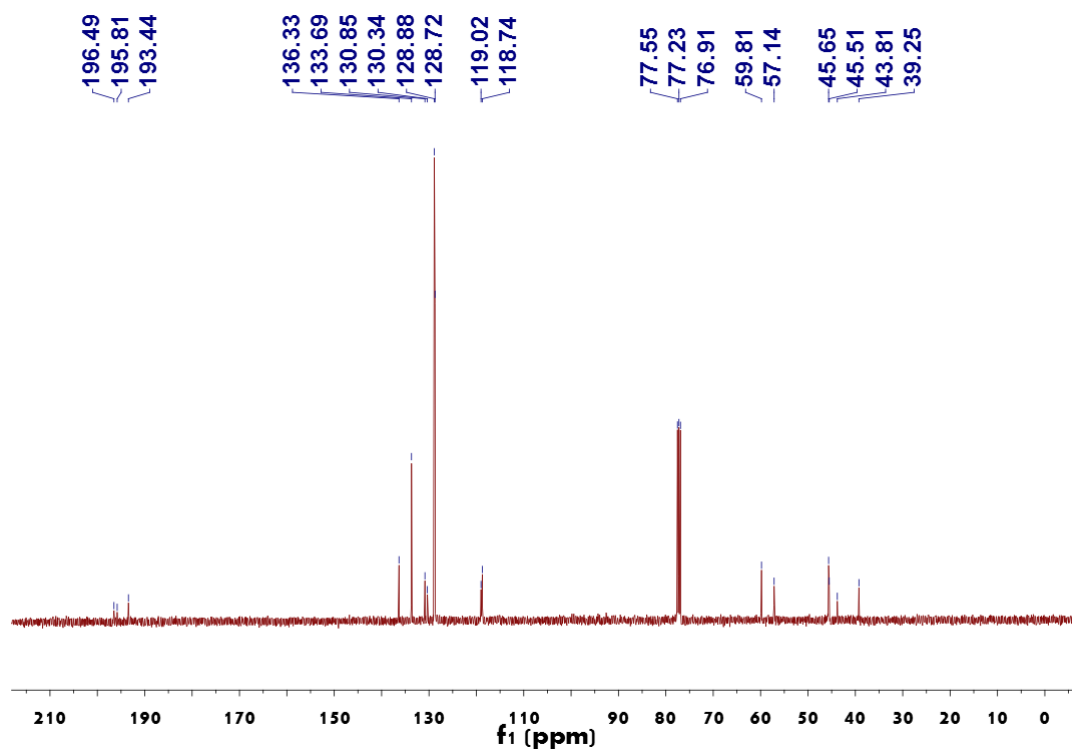
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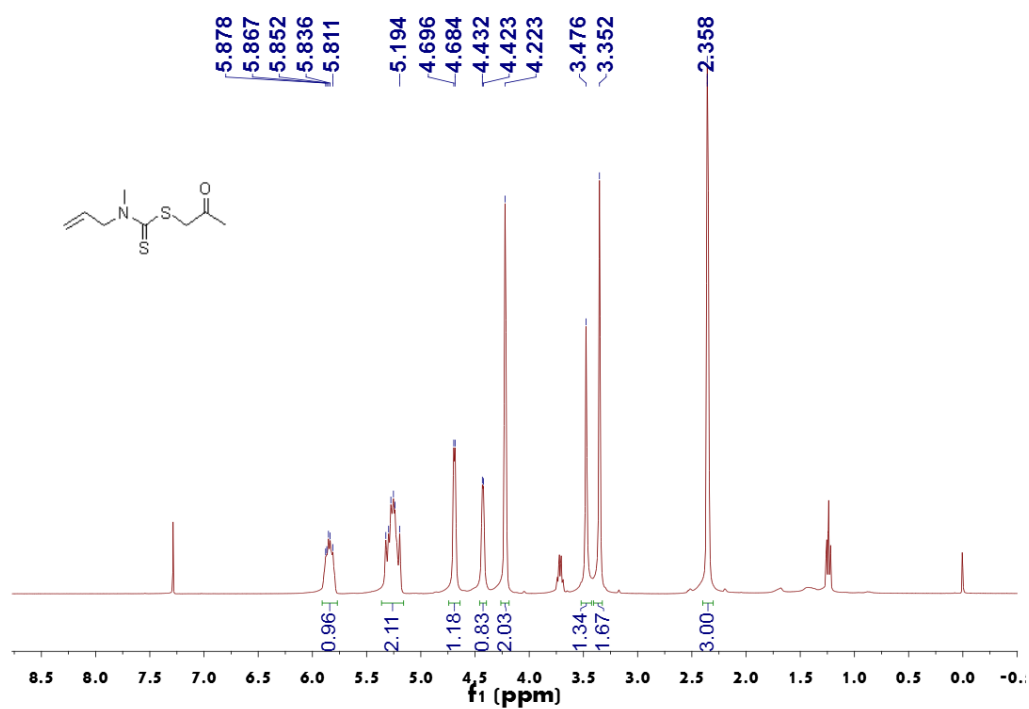
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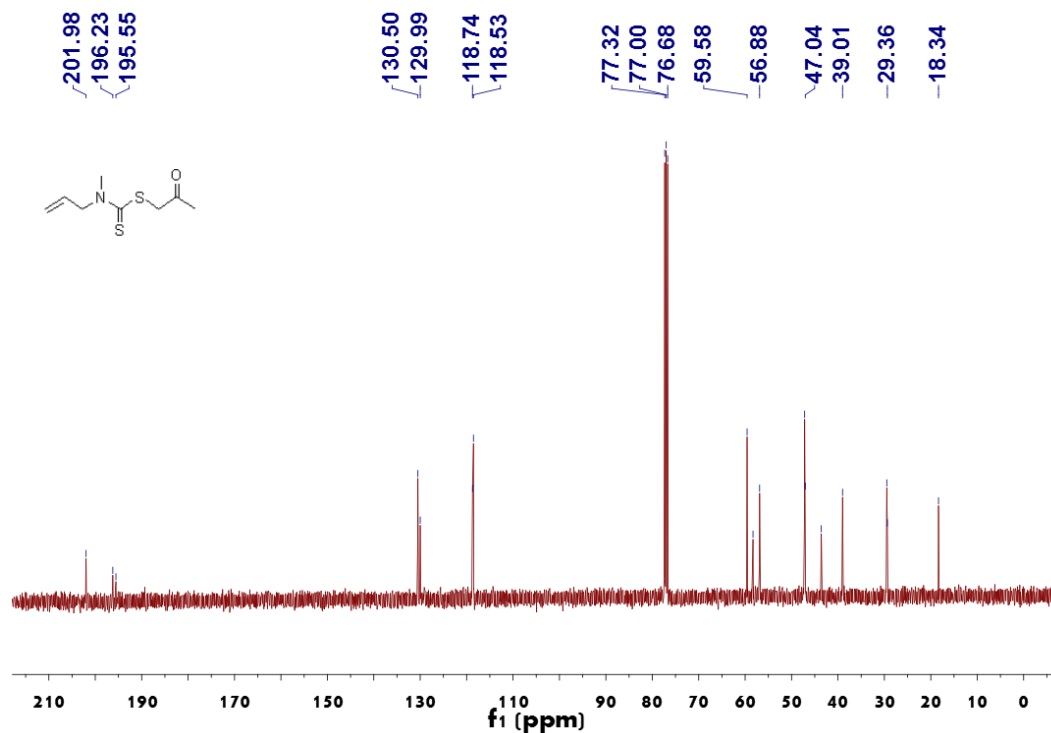
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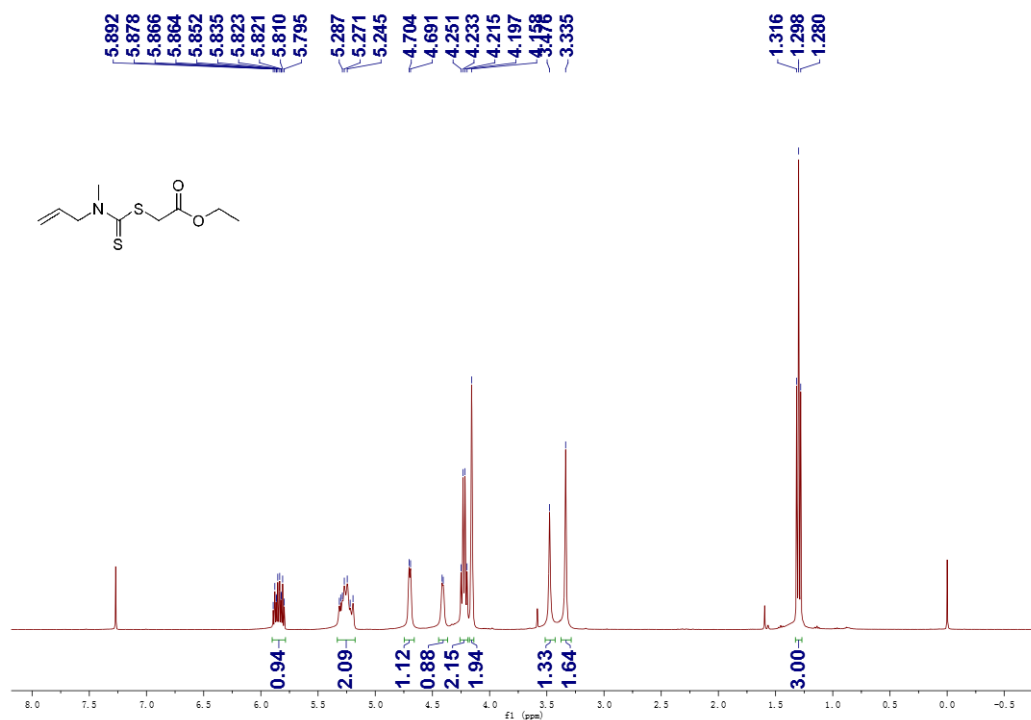
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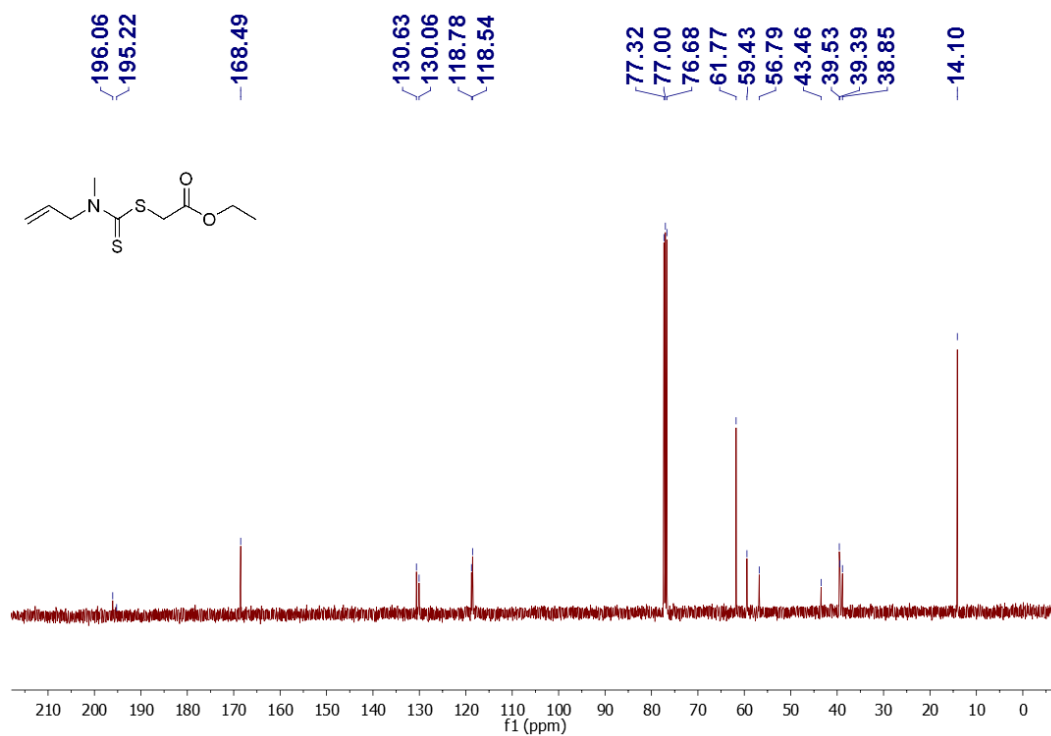
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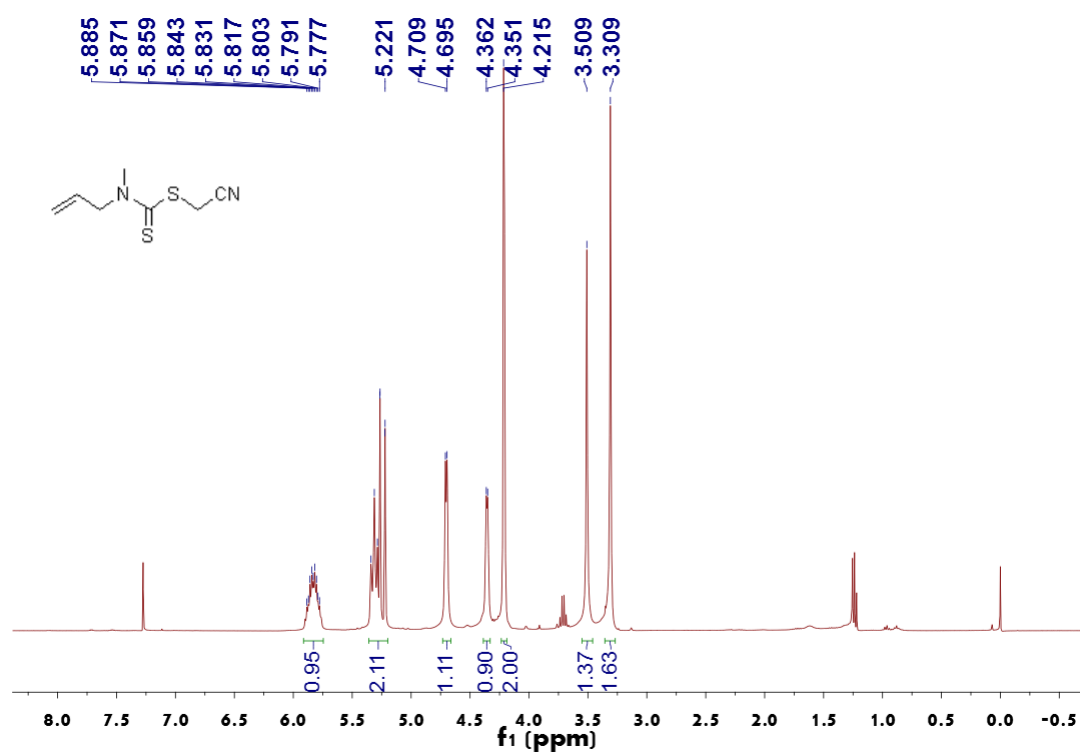
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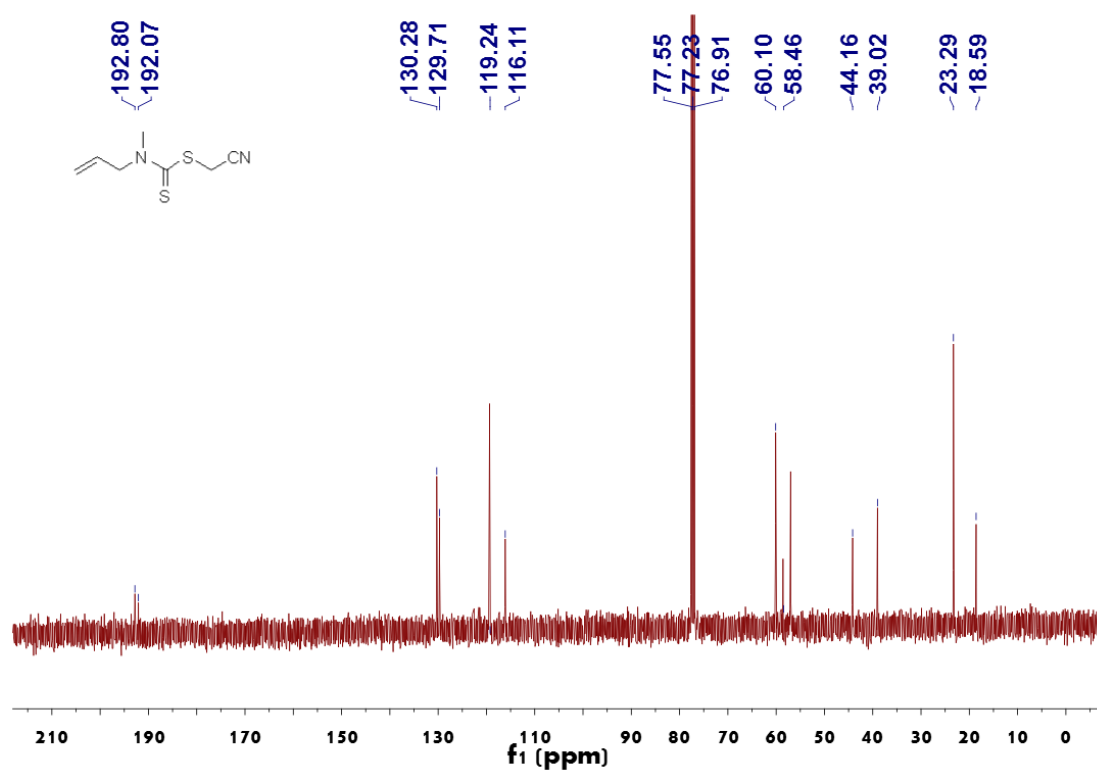
^{13}C NMR (101 MHz, CDCl_3) spectrum of **1g**



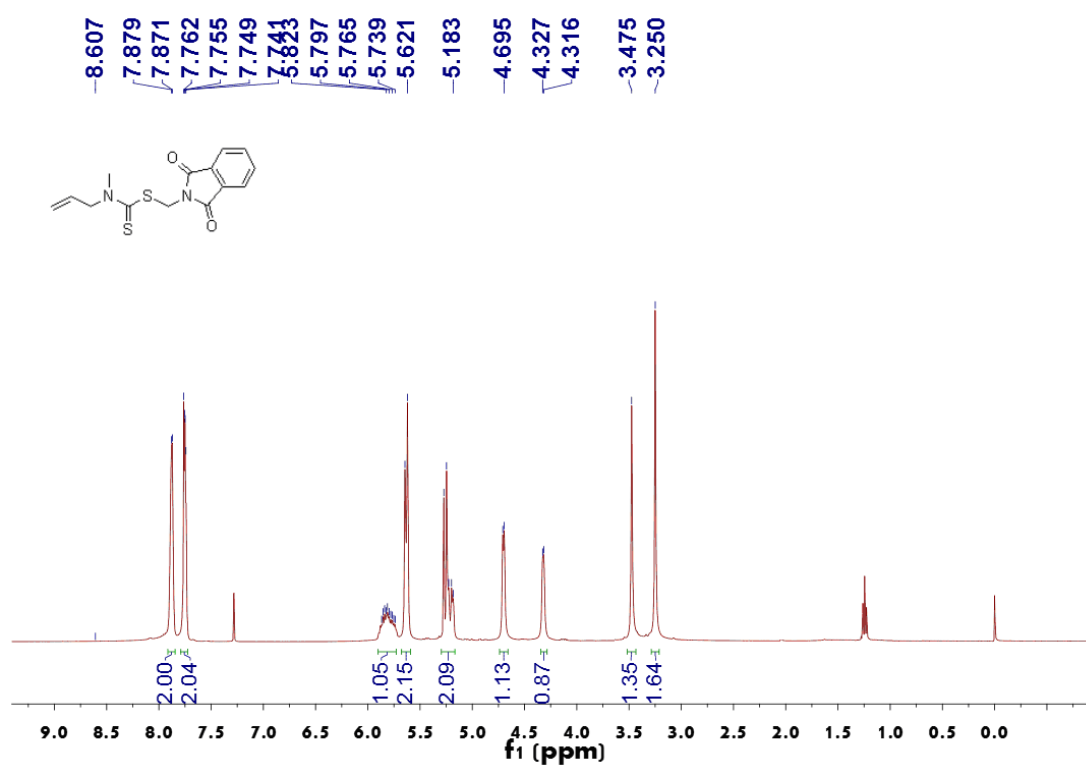
¹H NMR (400 MHz, CDCl₃) spectrum of **1h**



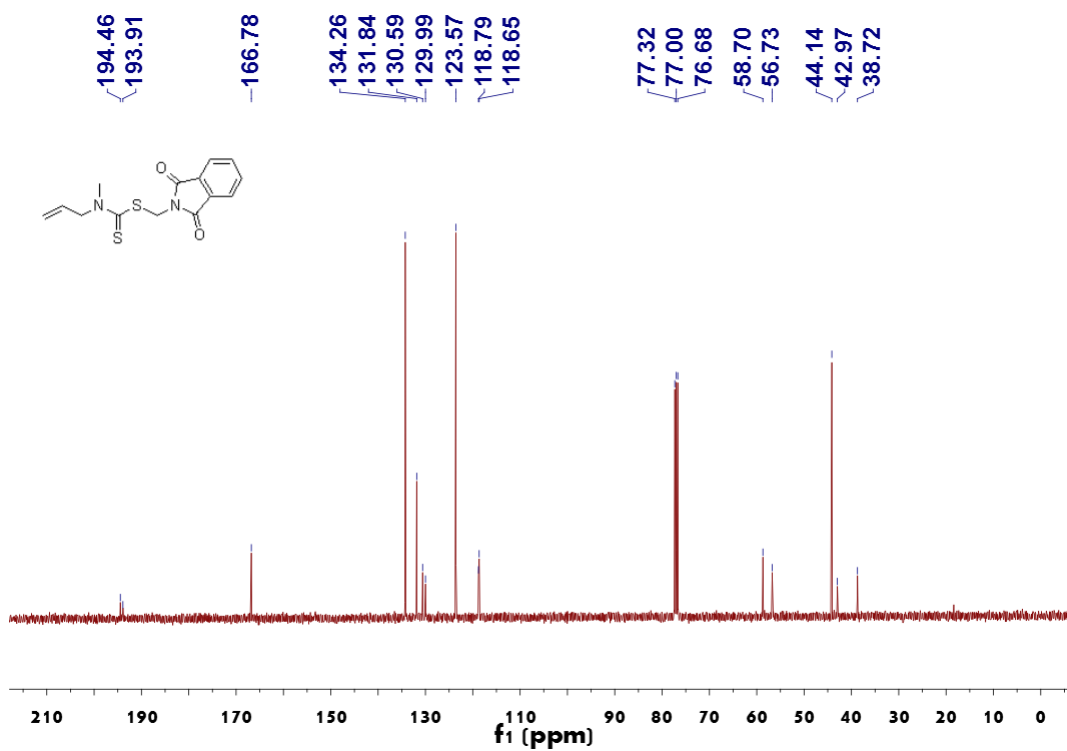
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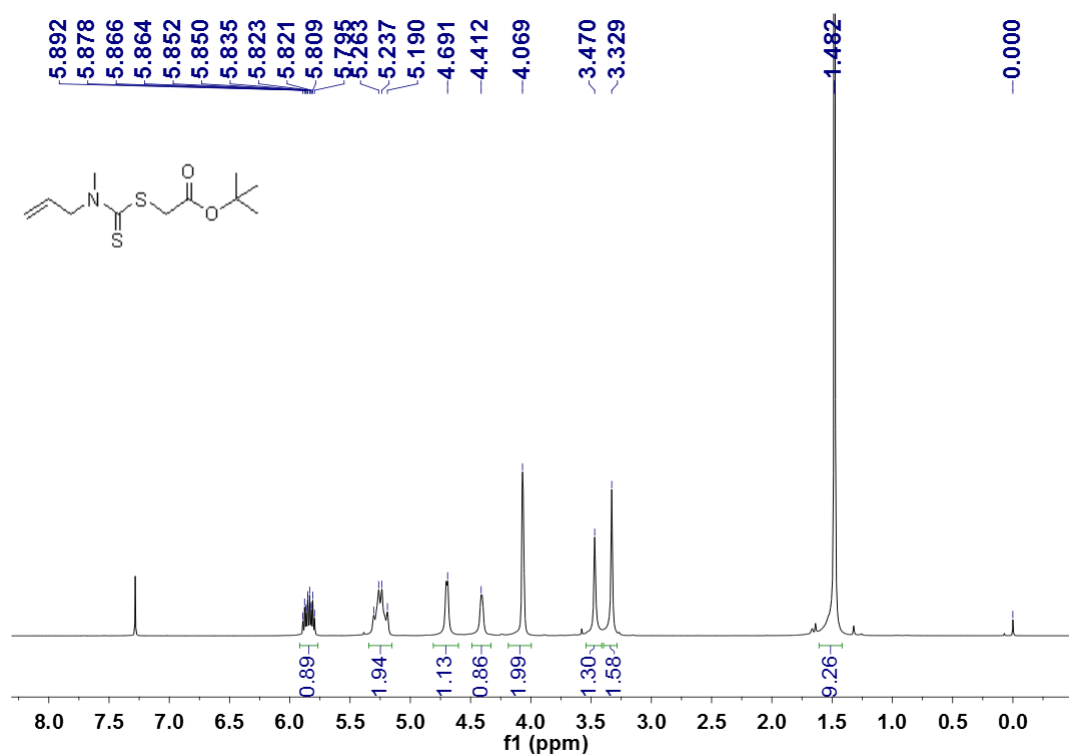
^1H NMR (400 MHz, CDCl_3) spectrum of **1i**



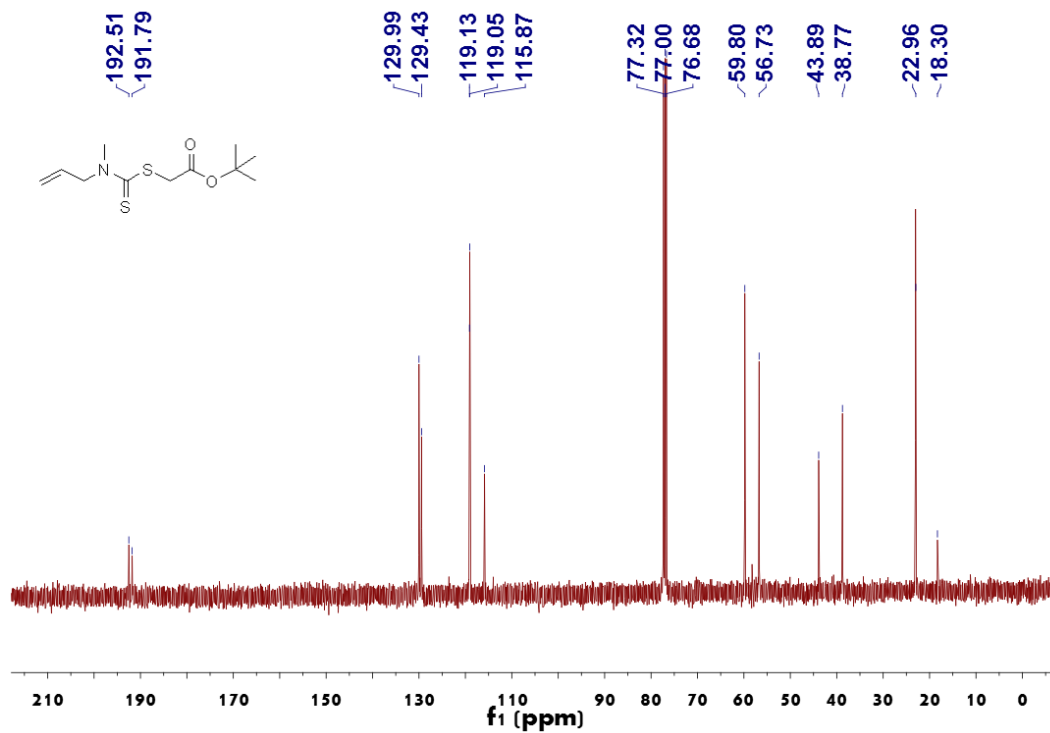
^{13}C NMR (101 MHz, CDCl_3) spectrum of **1i**



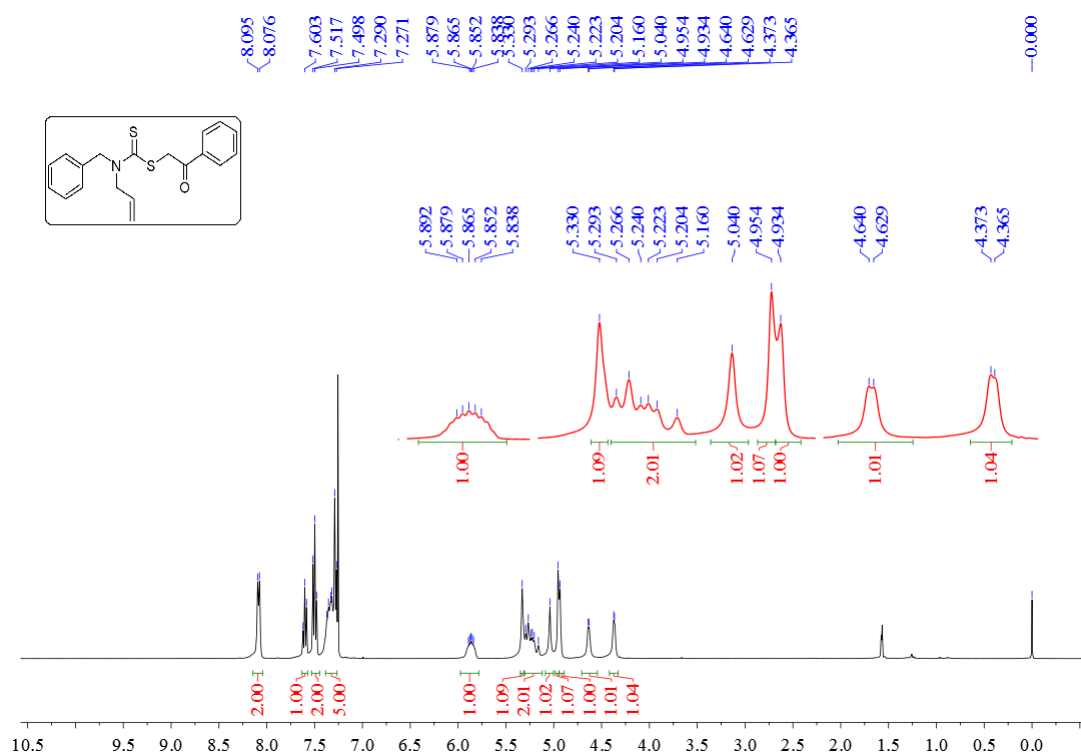
^1H NMR (400 MHz, CDCl_3) spectrum of **1j**



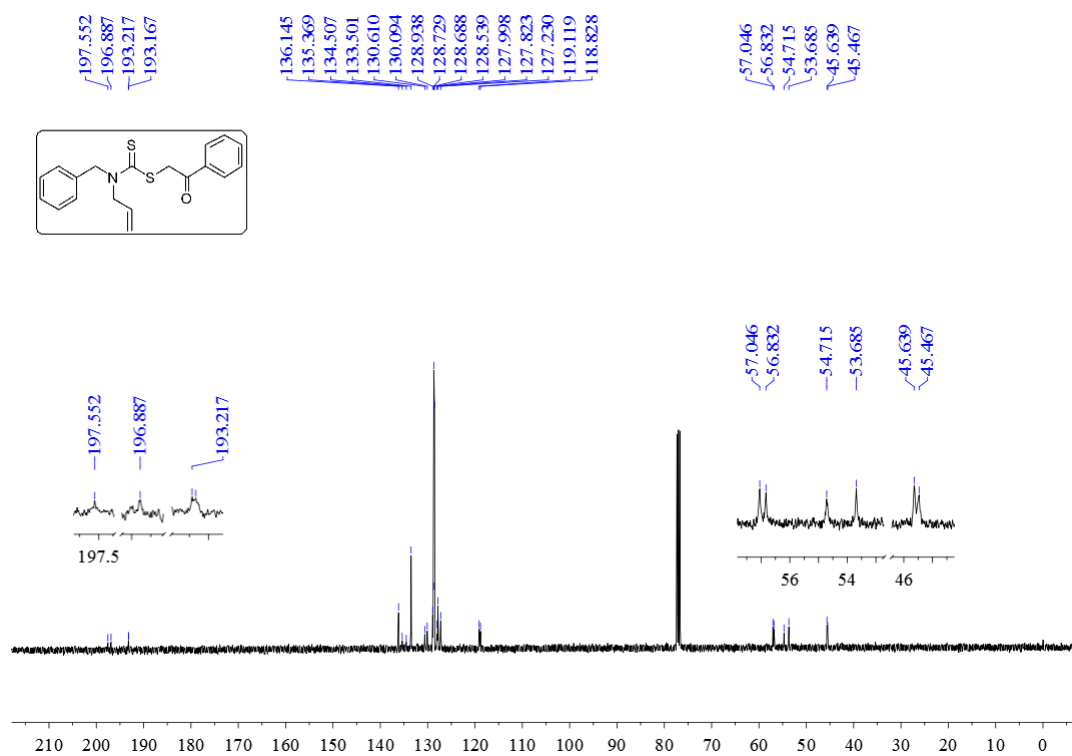
^{13}C NMR (101 MHz, CDCl_3) spectrum of **1j**



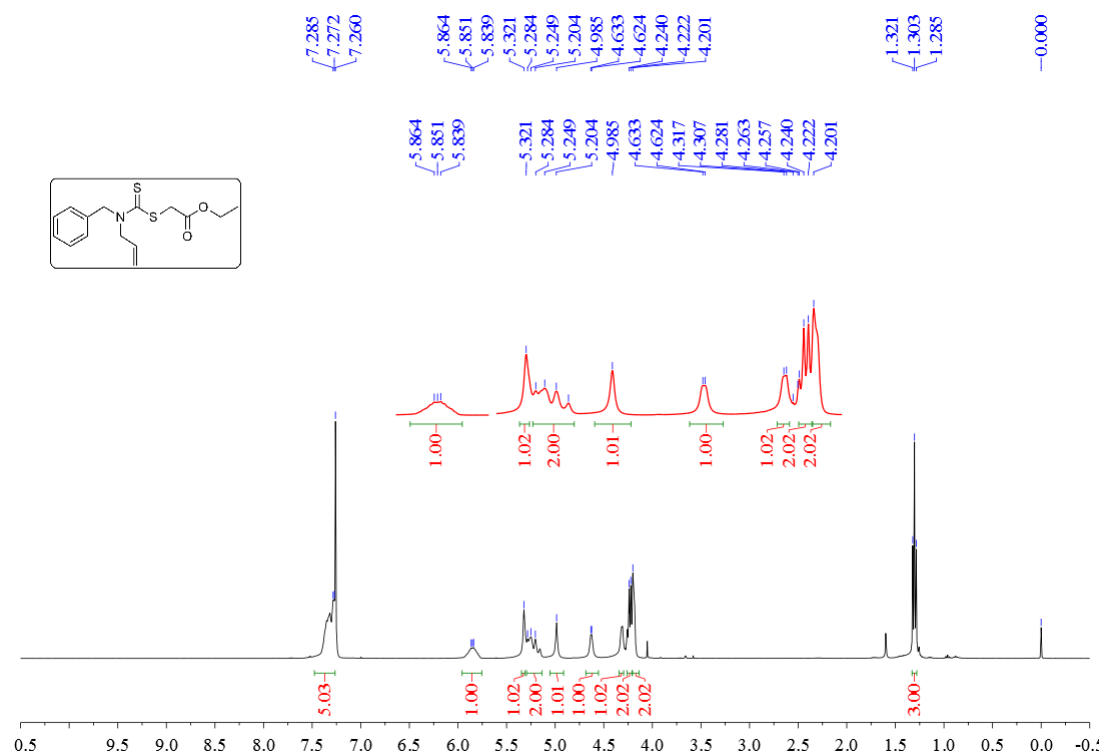
^1H NMR (400 MHz, CDCl_3) spectrum of **1k** (with rotamer: 1:1).



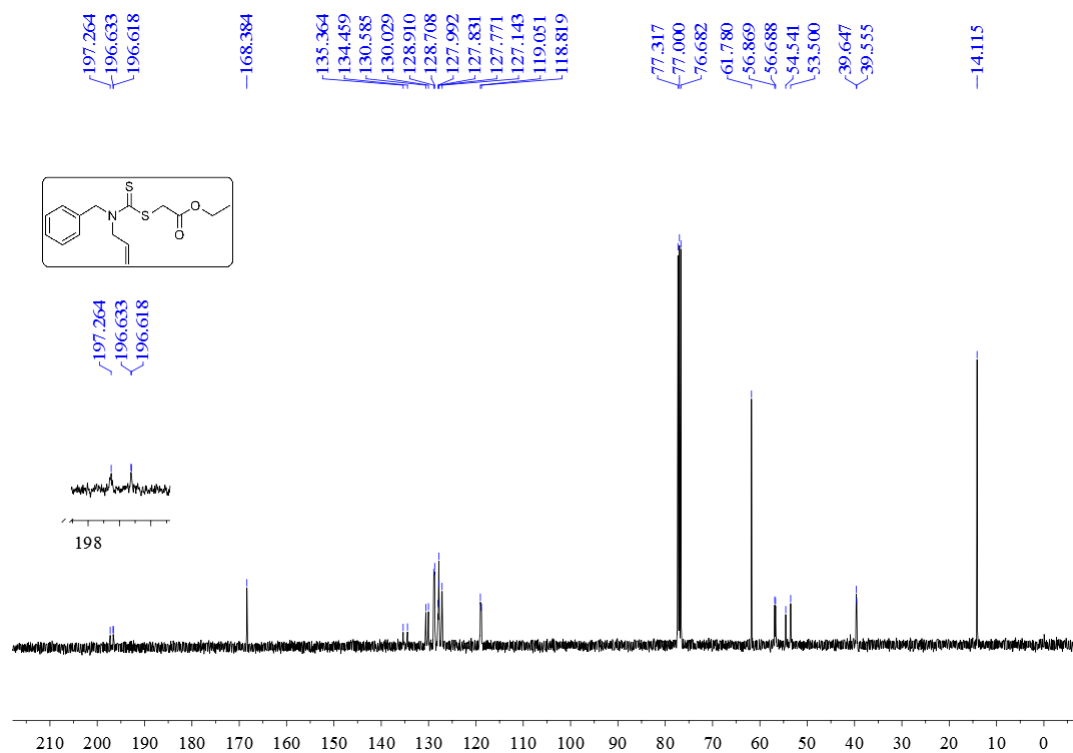
^{13}C NMR (101 MHz, CDCl_3) spectrum of **1k**



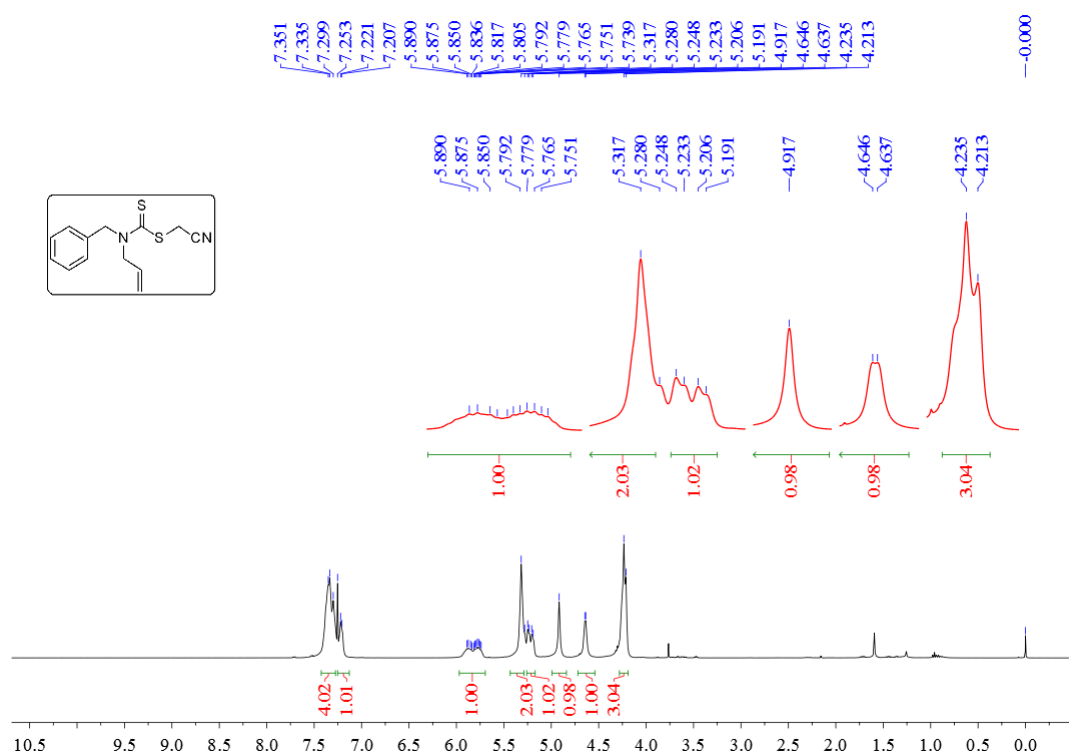
^1H NMR (400 MHz, CDCl_3) spectrum of **11**



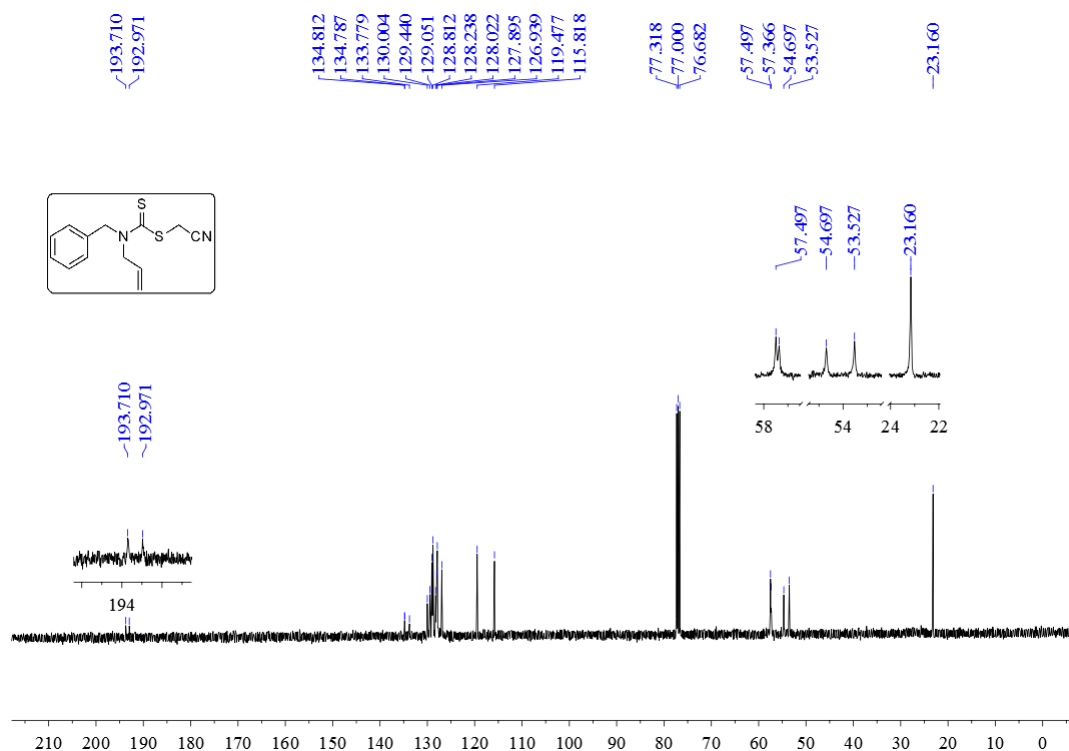
^{13}C NMR (101 MHz, CDCl_3) spectrum of **11**



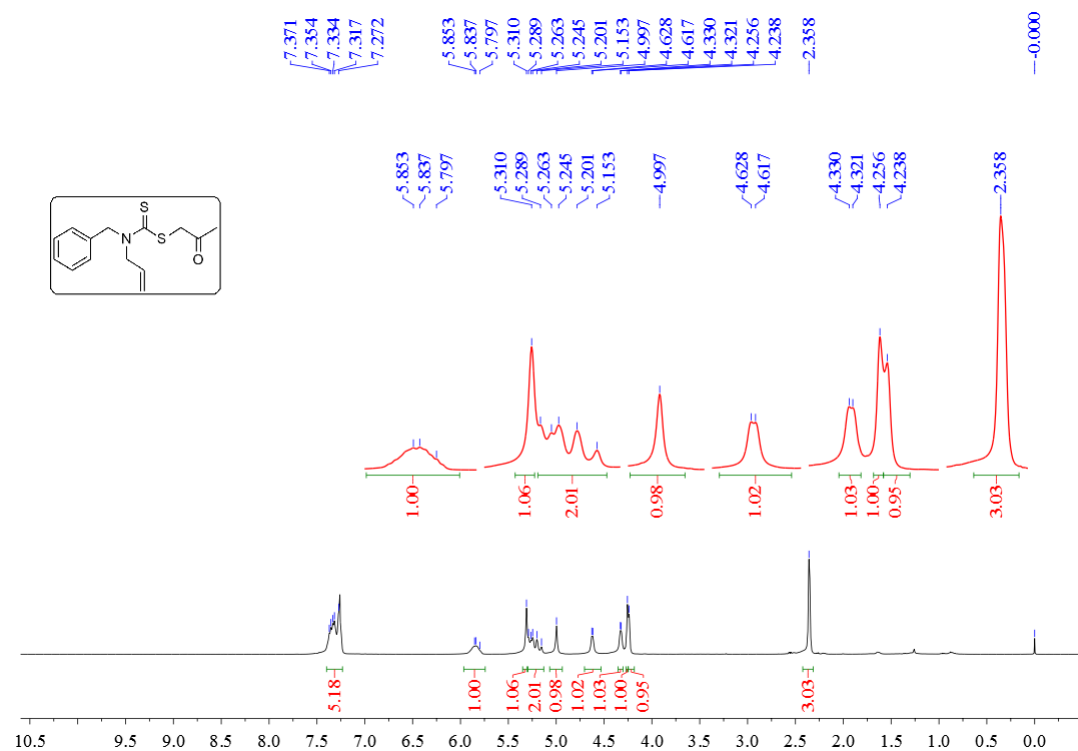
^1H NMR (400 MHz, CDCl_3) spectrum of **1m**



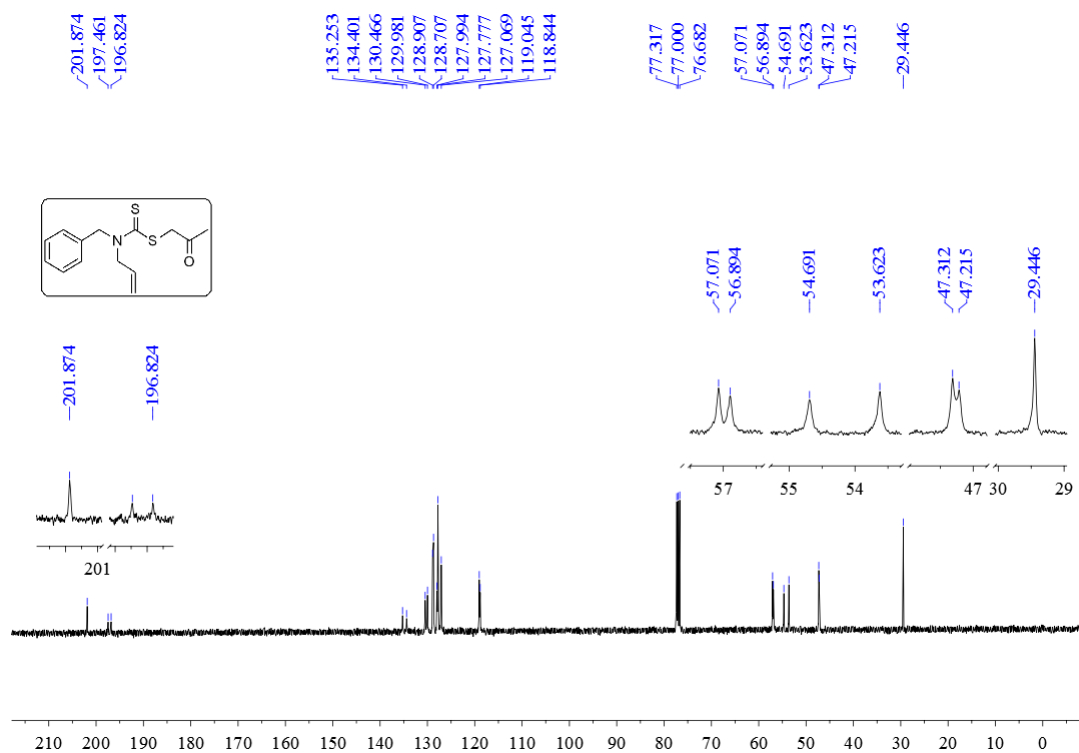
^{13}C NMR (101 MHz, CDCl_3) spectrum of **1m**



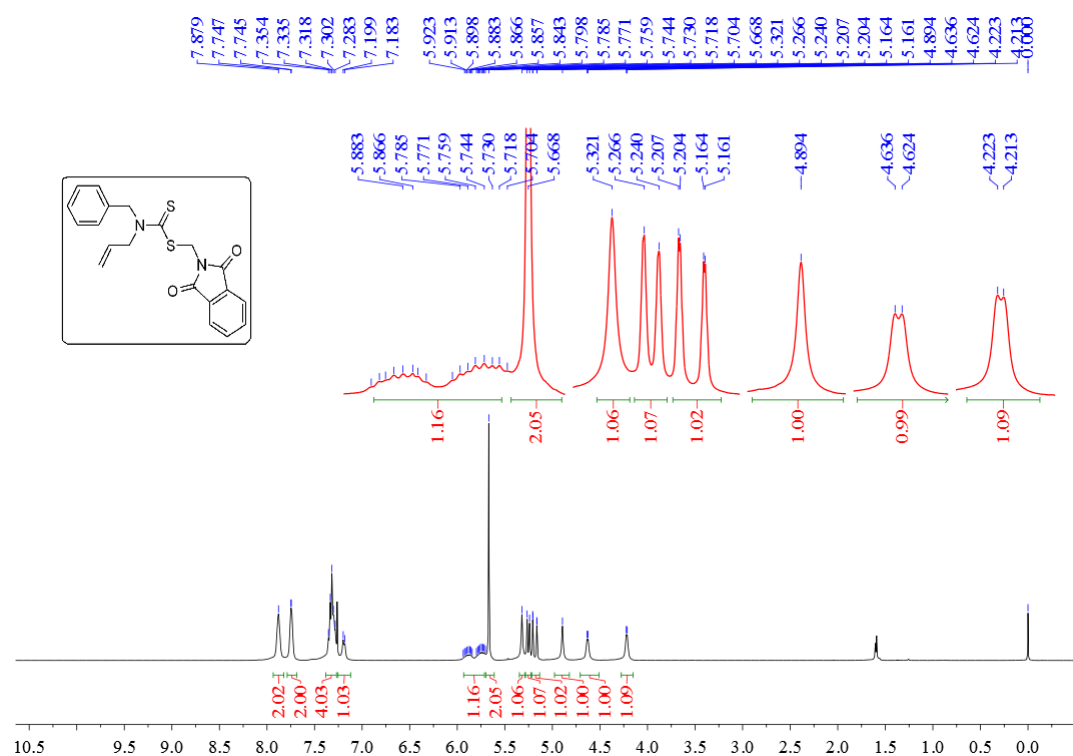
^1H NMR (400 MHz, CDCl_3) spectrum of **1n**



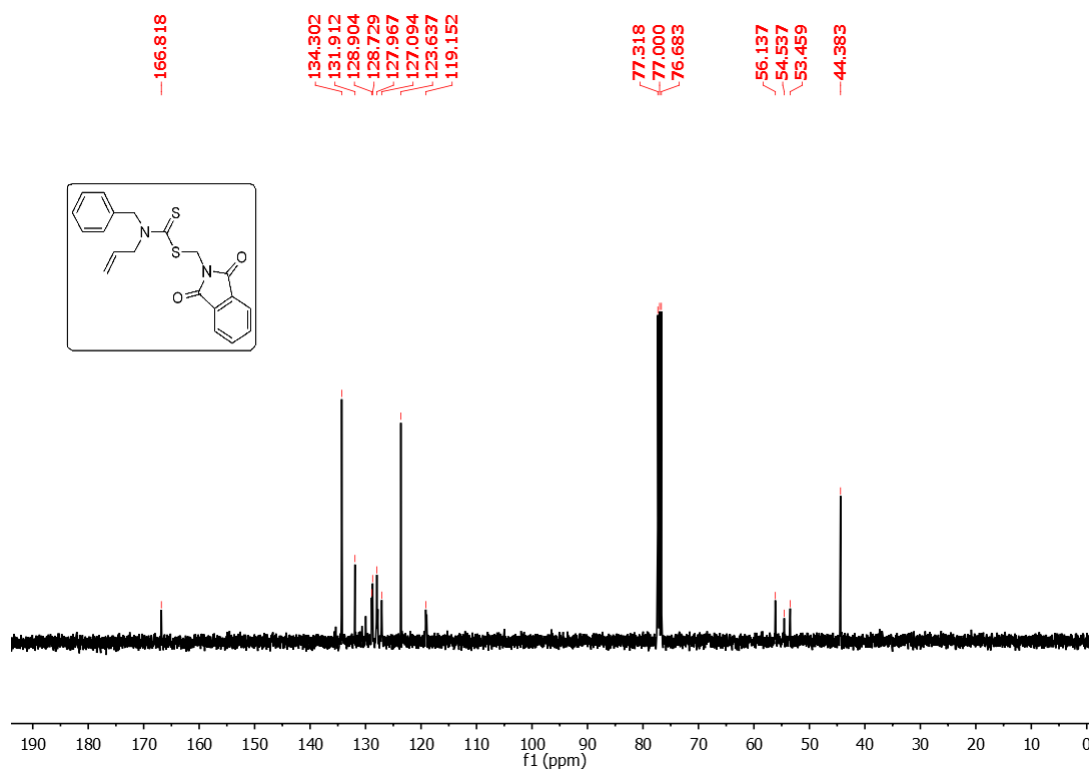
^{13}C NMR (400 MHz, CDCl_3) spectrum of **1n**



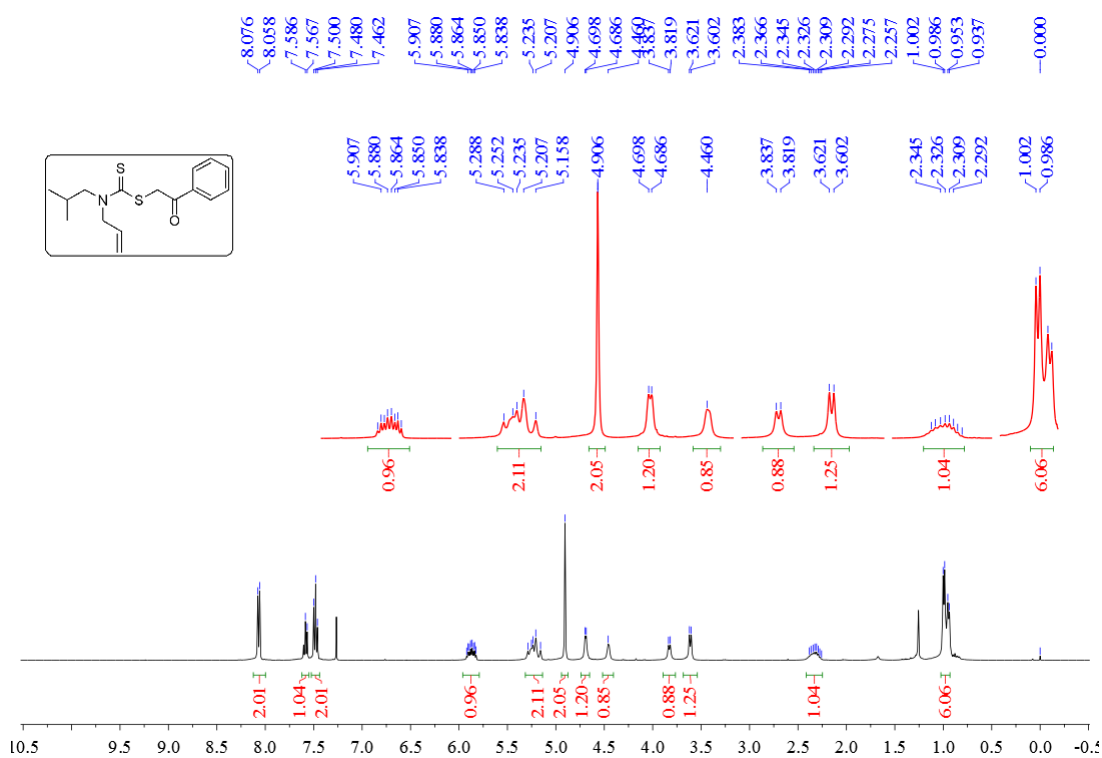
¹H NMR (400 MHz, CDCl₃) spectrum of **1o**



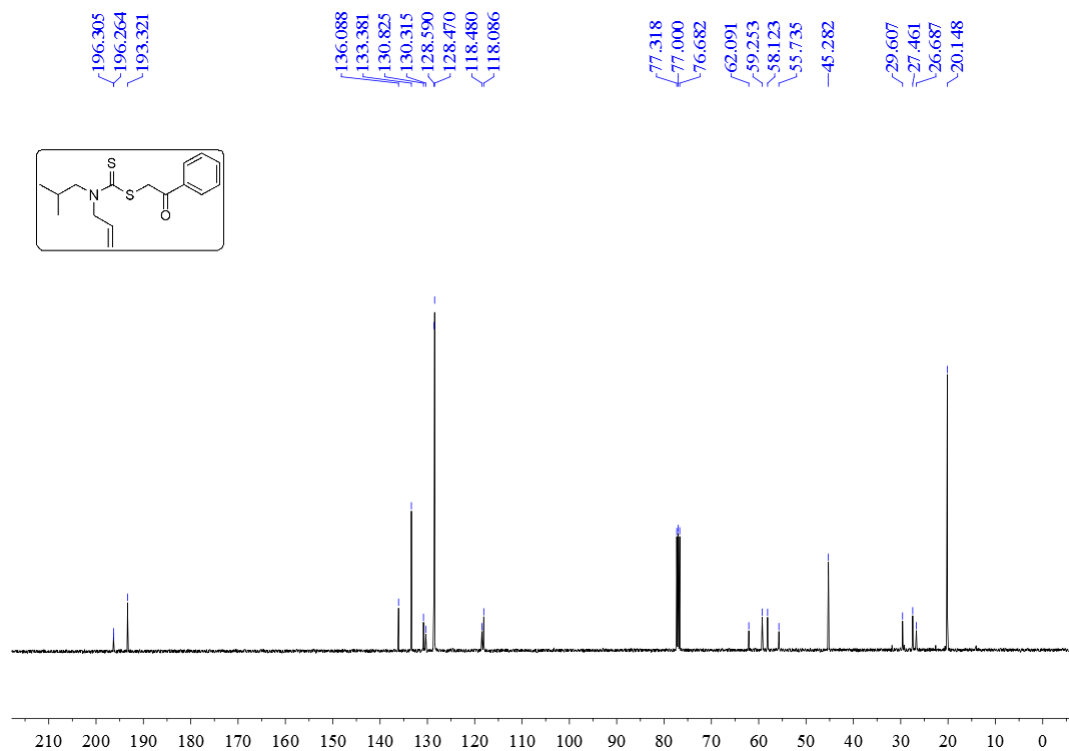
¹³C NMR (400 MHz, CDCl₃) of **1o**



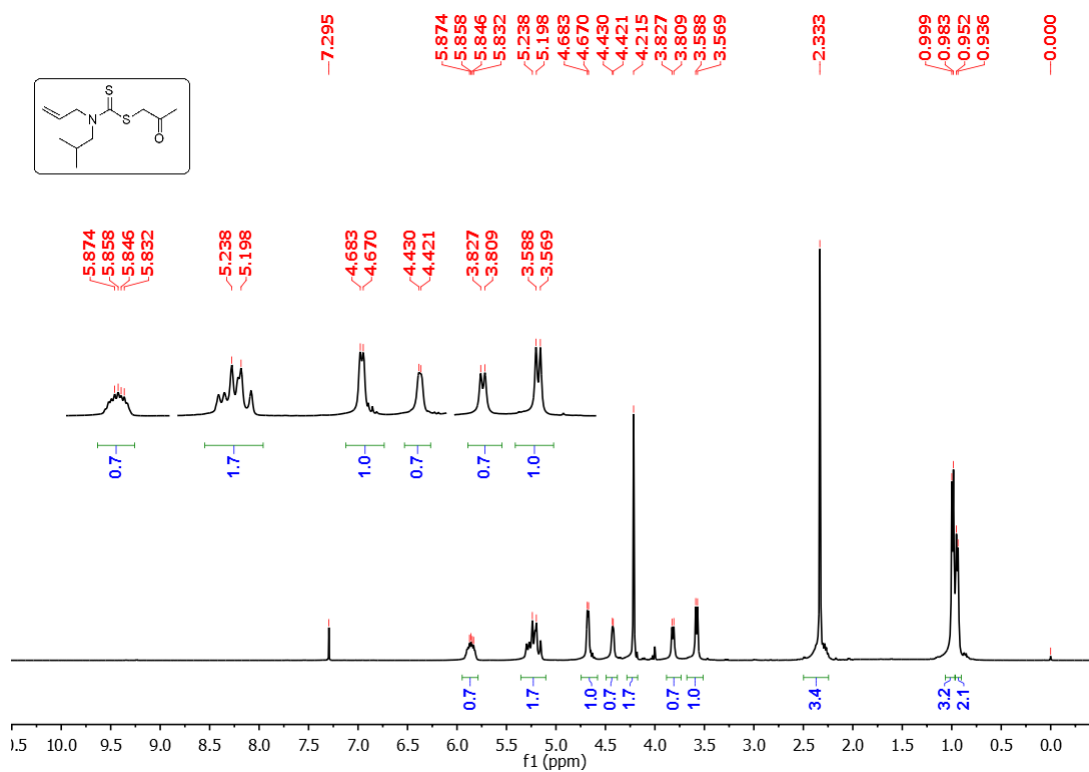
¹H NMR (400 MHz, CDCl₃) spectrum of **1p**



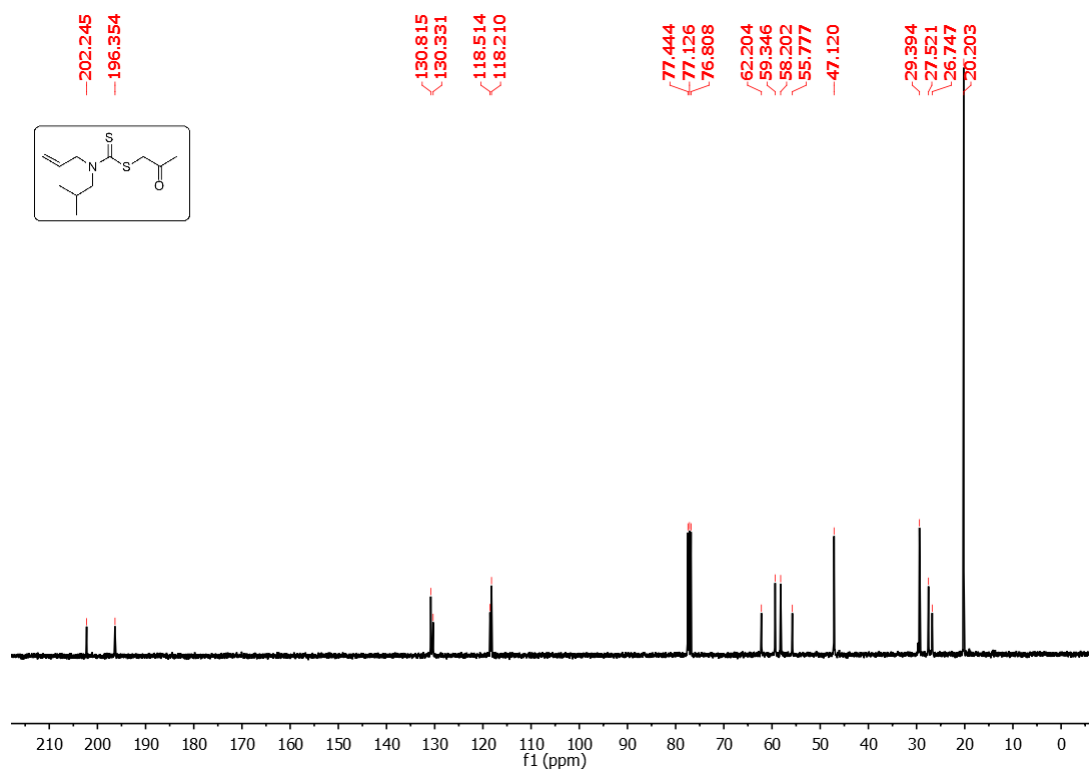
¹³C NMR (400 MHz, CDCl₃) spectrum of **1p**



¹H NMR (400 MHz, CDCl₃) spectrum of **1q**

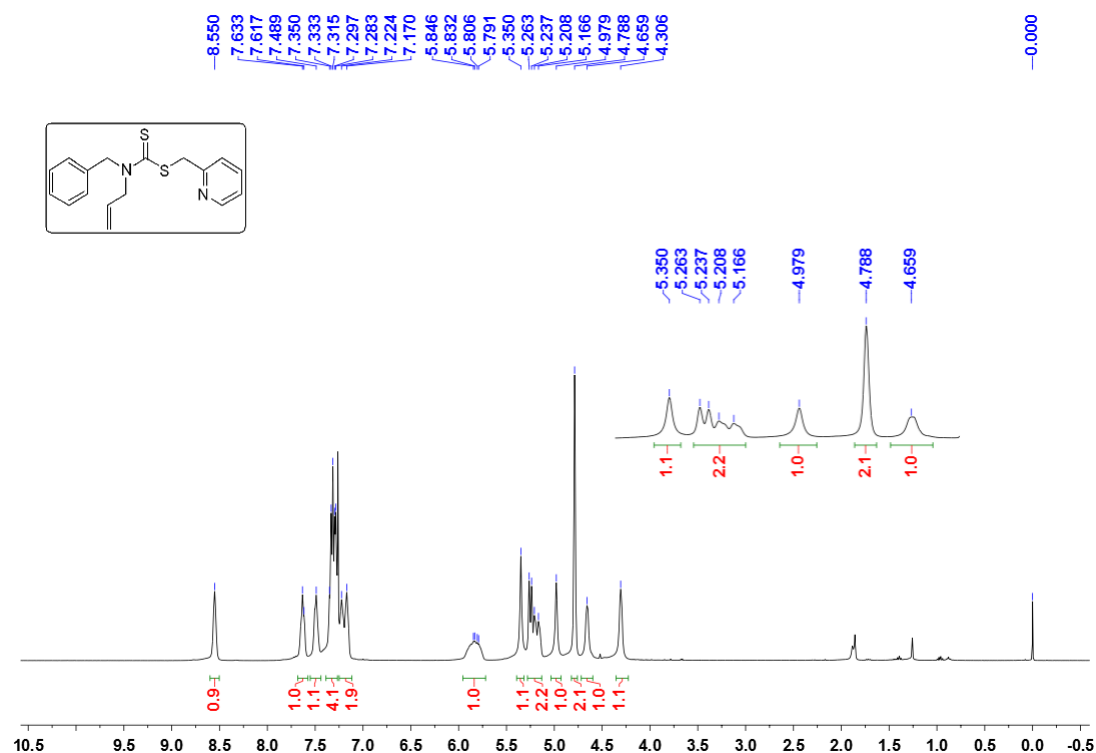


¹³C NMR (400 MHz, CDCl₃) spectrum of **1q**

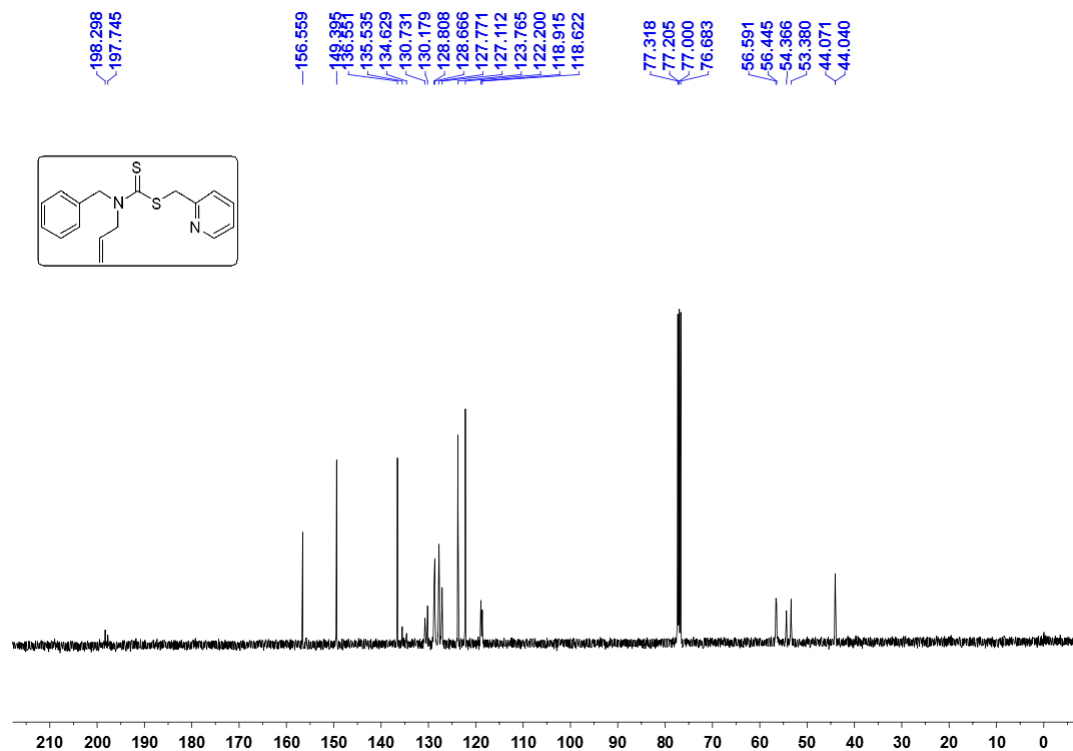


NMR spectra of Pyridin-2-ylmethyl allyl(benzyl)dithiocarbamate

^1H NMR (400 MHz, CDCl_3) spectrum

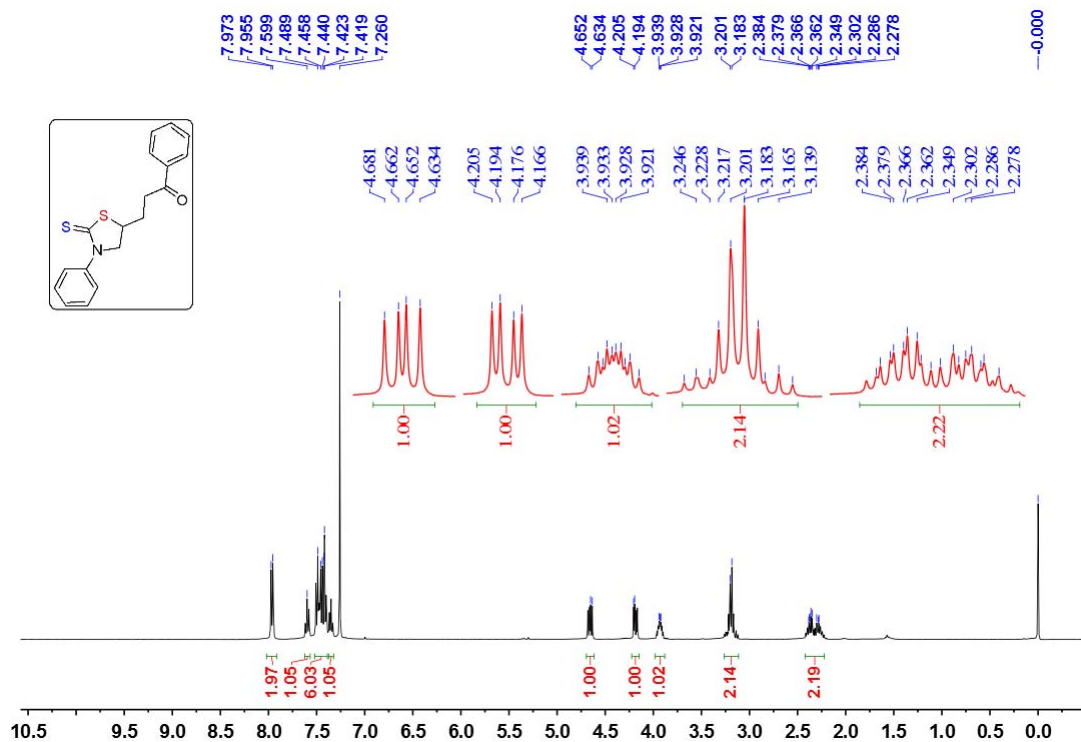


^{13}C NMR (101 MHz, CDCl_3) spectrum

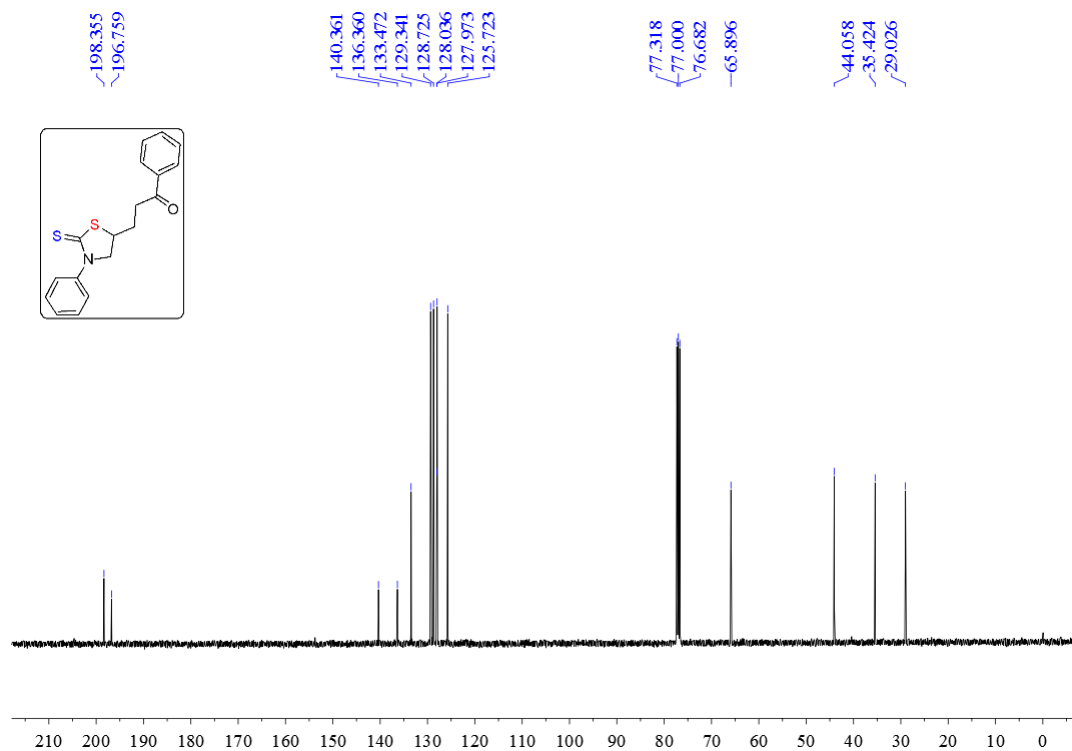


NMR spectra of 3,5-disubstituted thiazolidine-2-thiones 2

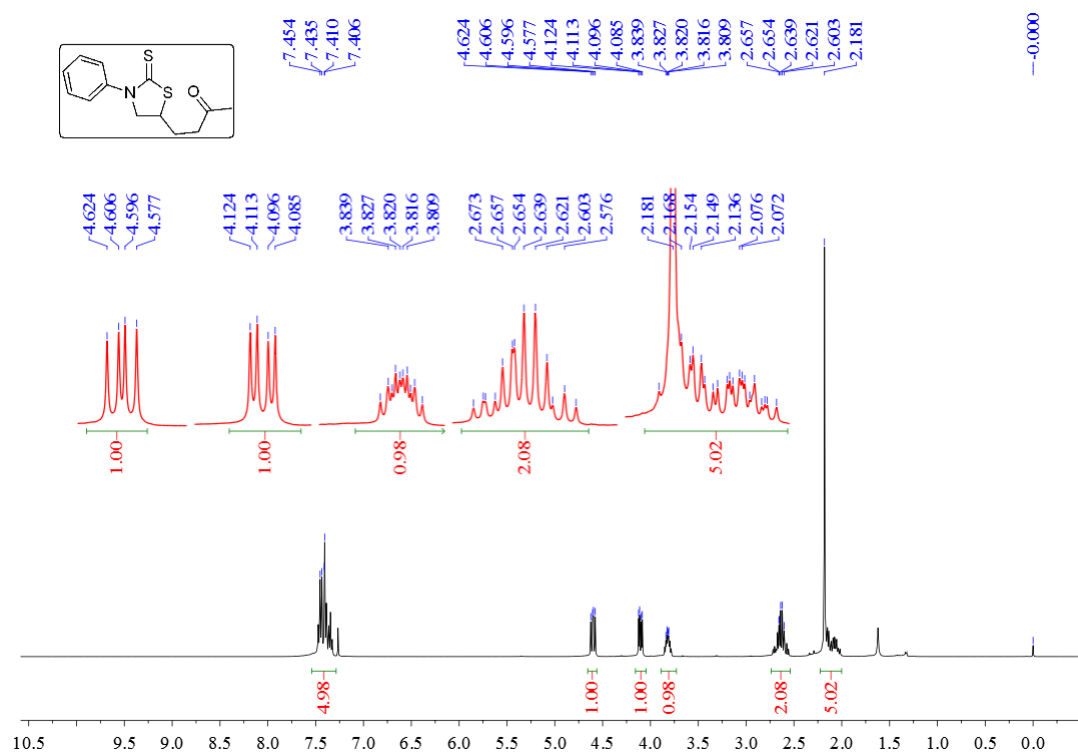
^1H NMR (400 MHz, CDCl_3) spectrum of **2a**



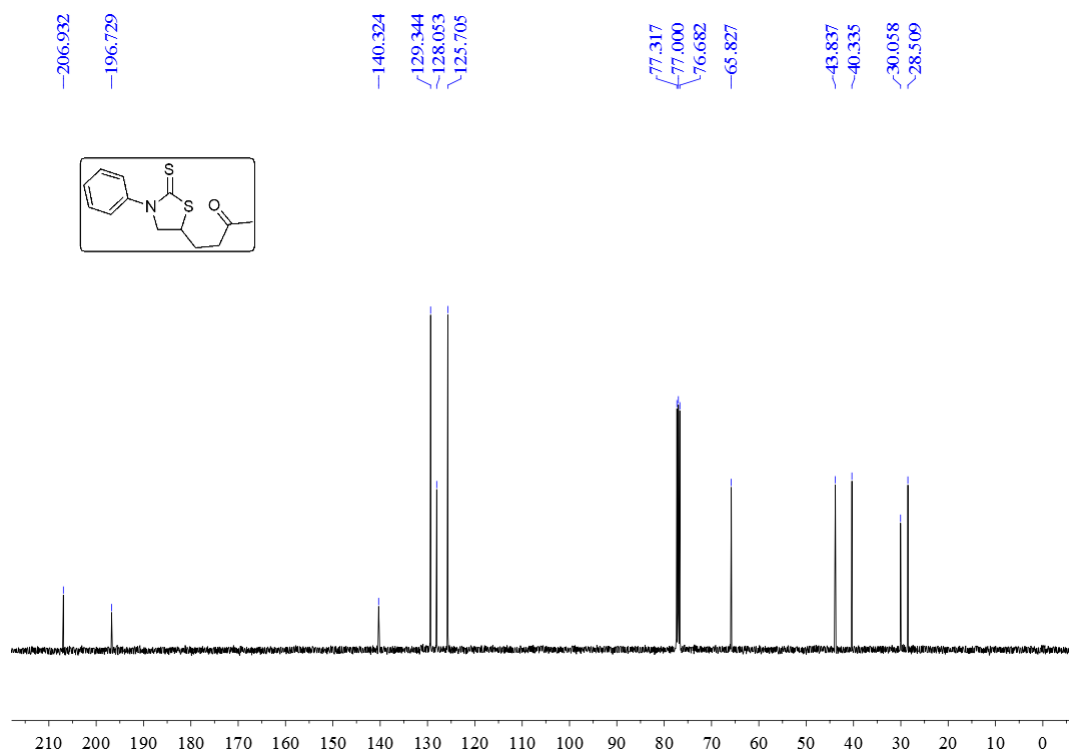
^{13}C NMR (101 MHz, CDCl_3) spectrum of **2a**



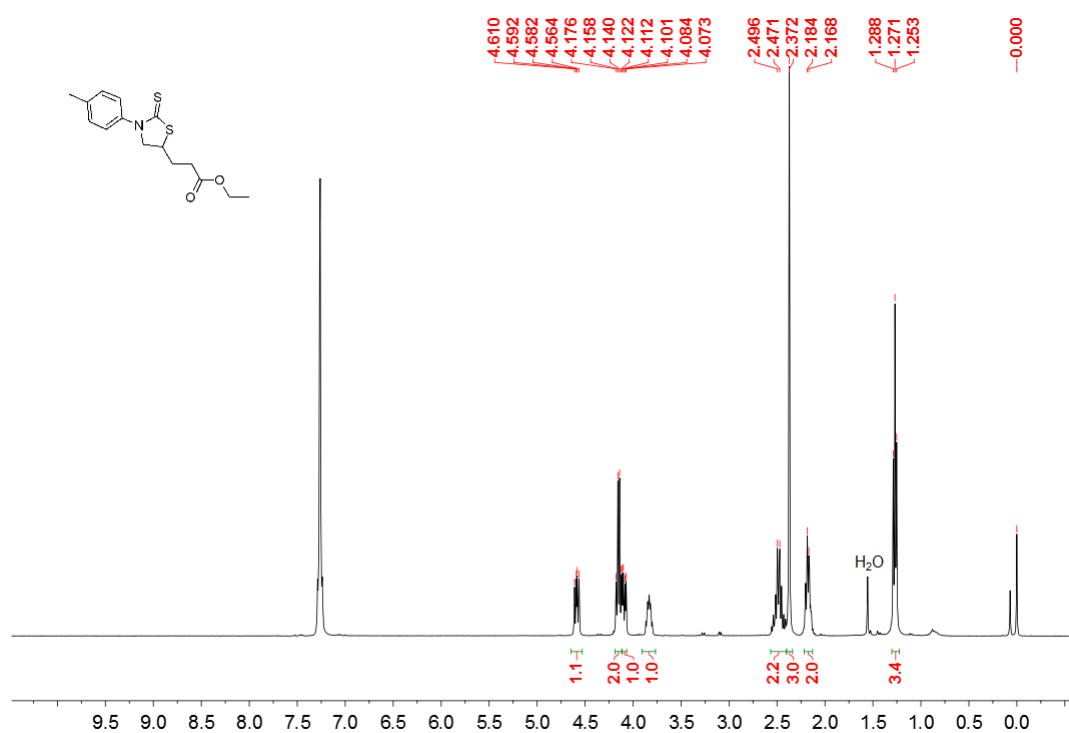
^1H NMR (400 MHz, CDCl_3) spectrum of **2b**



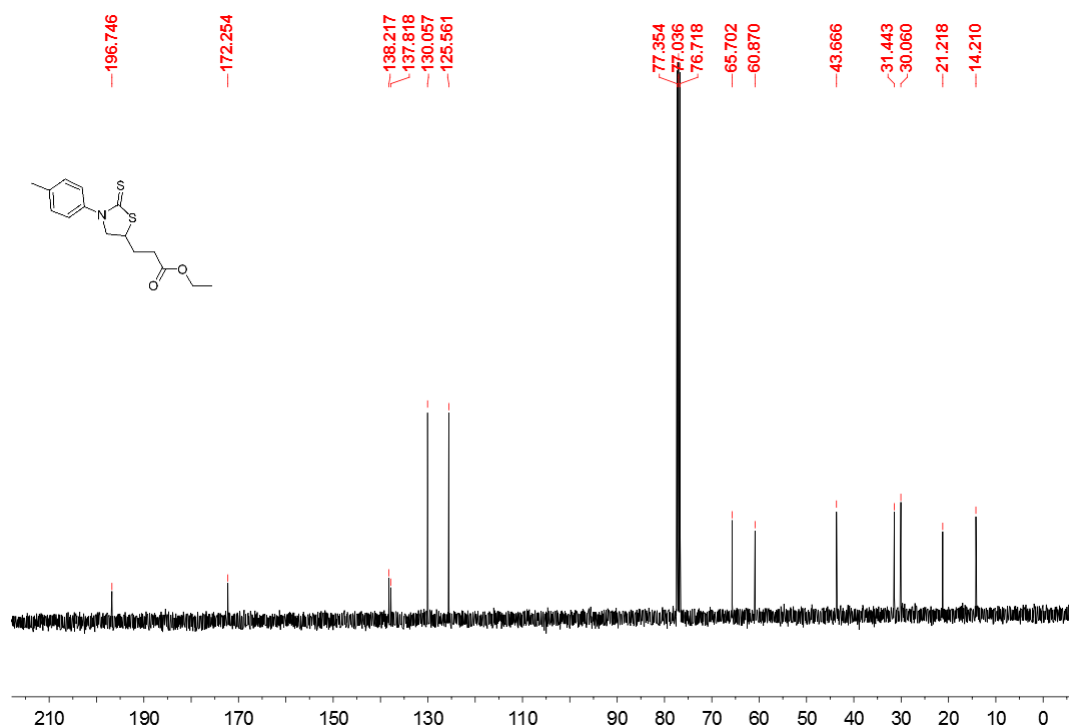
^{13}C NMR (101 MHz, CDCl_3) spectrum of **2b**



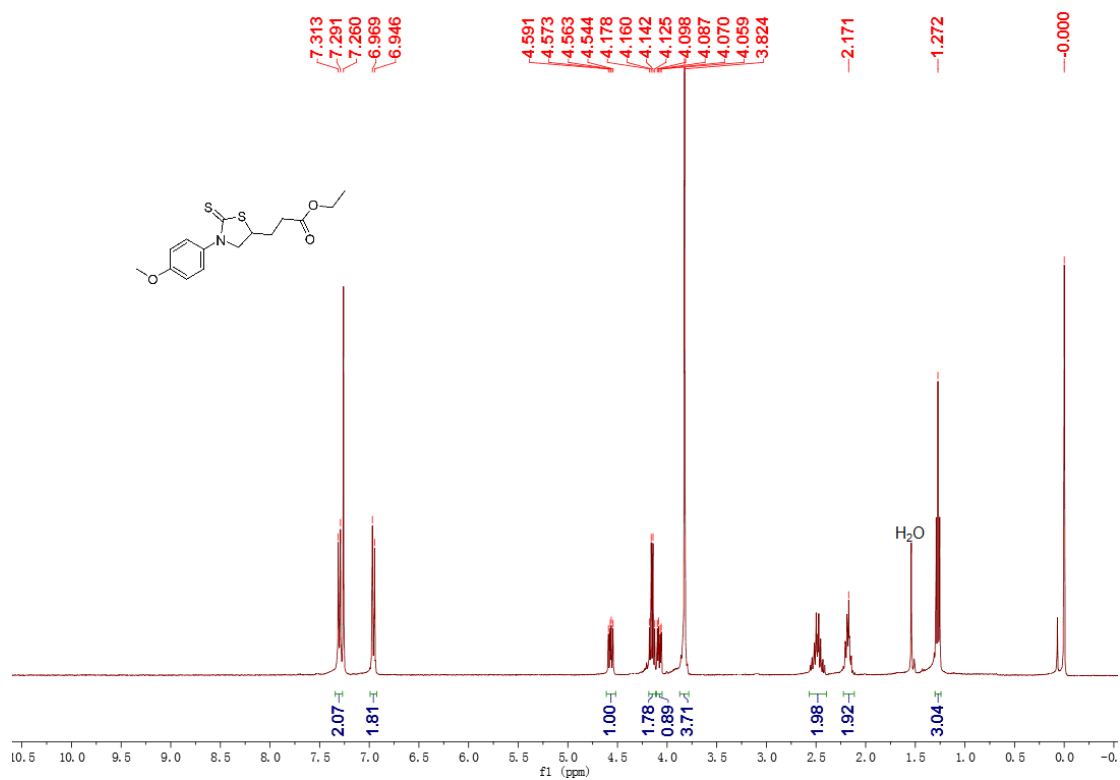
^1H NMR (400 MHz, CDCl_3) spectrum of **2c**



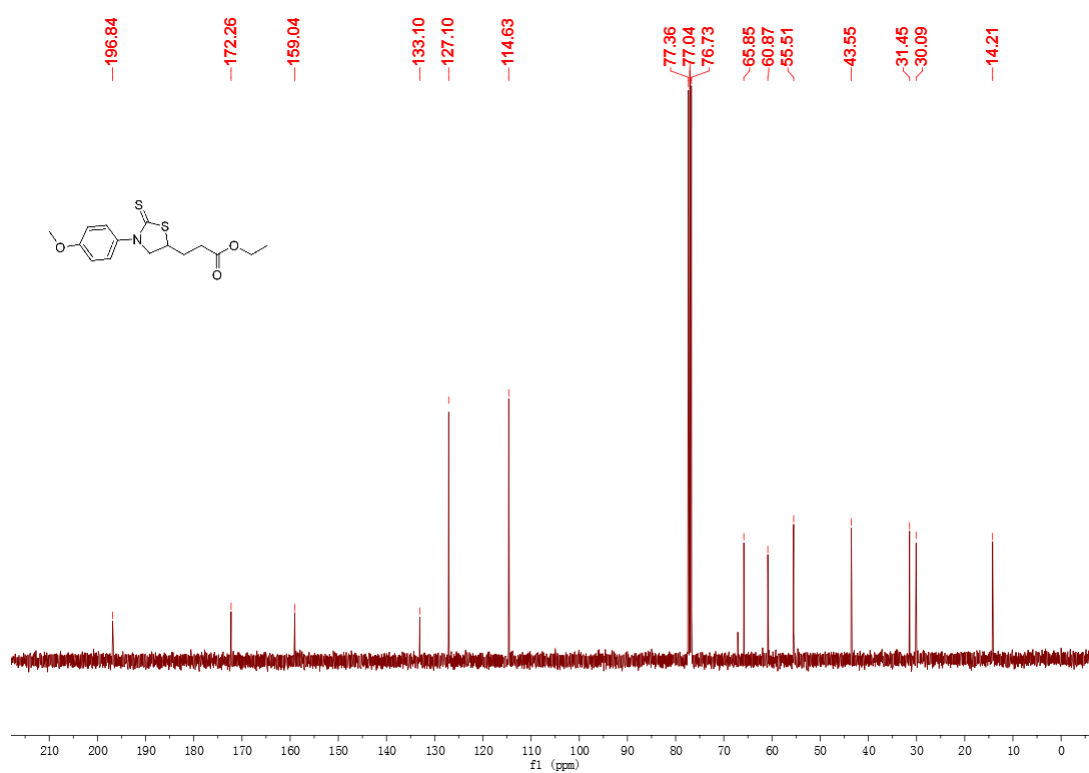
^{13}C NMR (101 MHz, CDCl_3) spectrum of **2c**



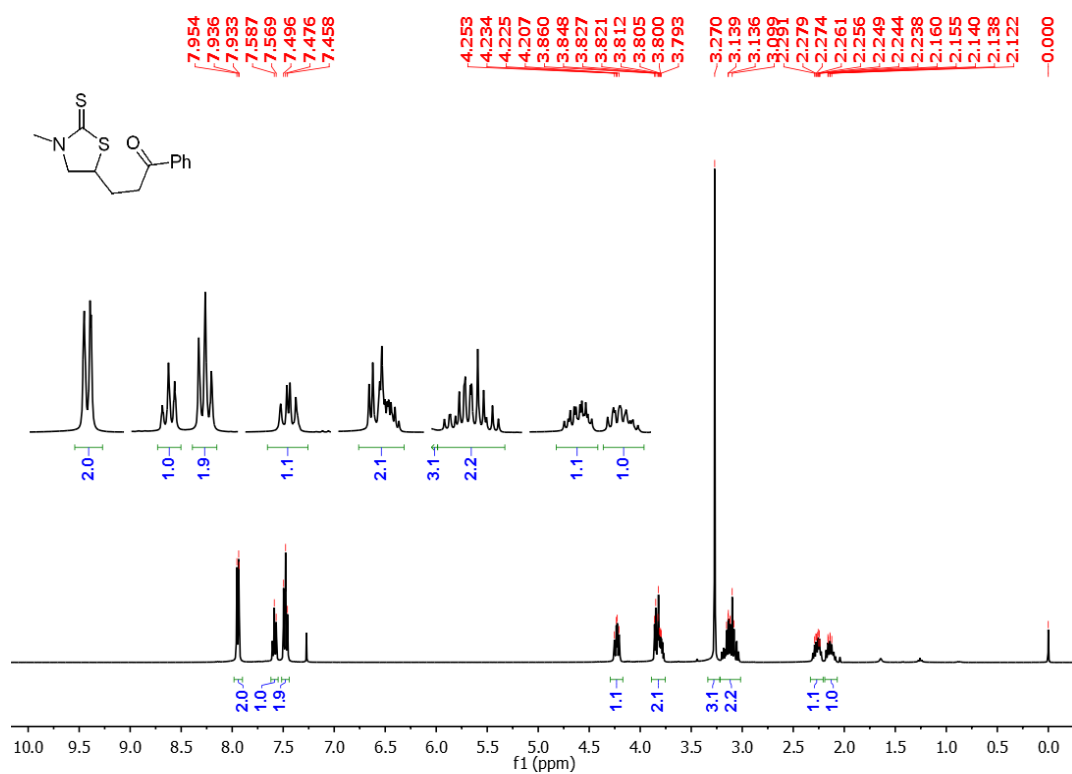
^1H NMR (400 MHz, CDCl_3) spectrum of **2d**



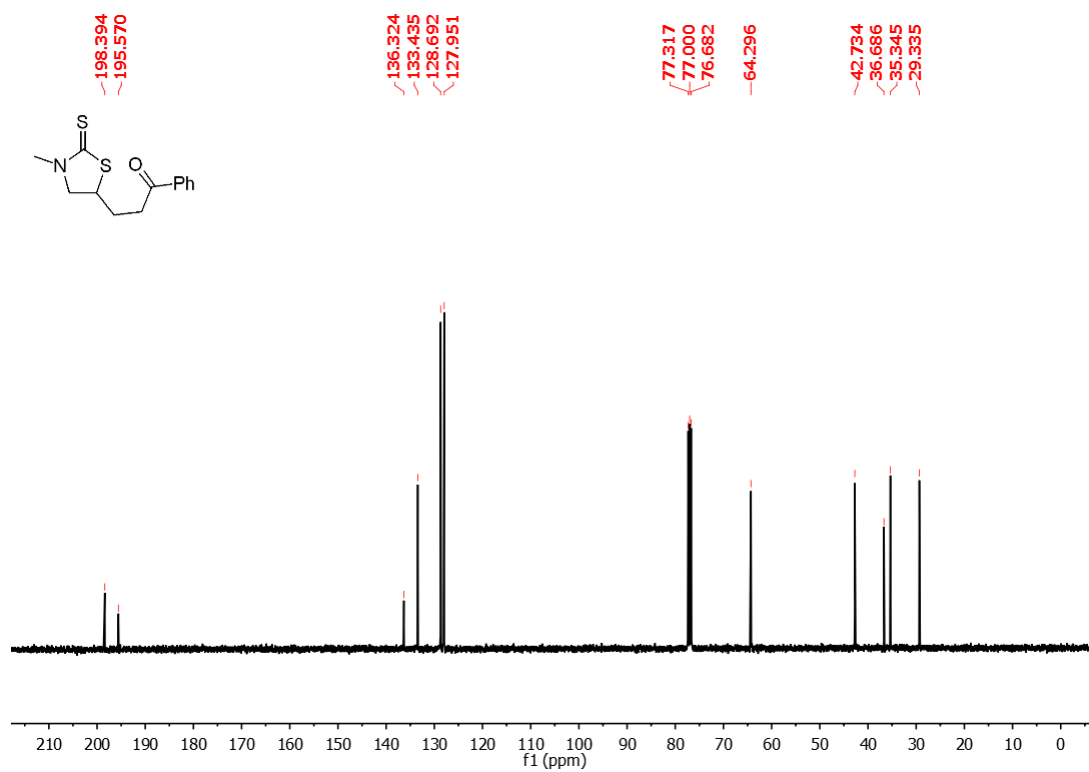
^{13}C NMR (101 MHz, CDCl_3) spectrum of **2d**



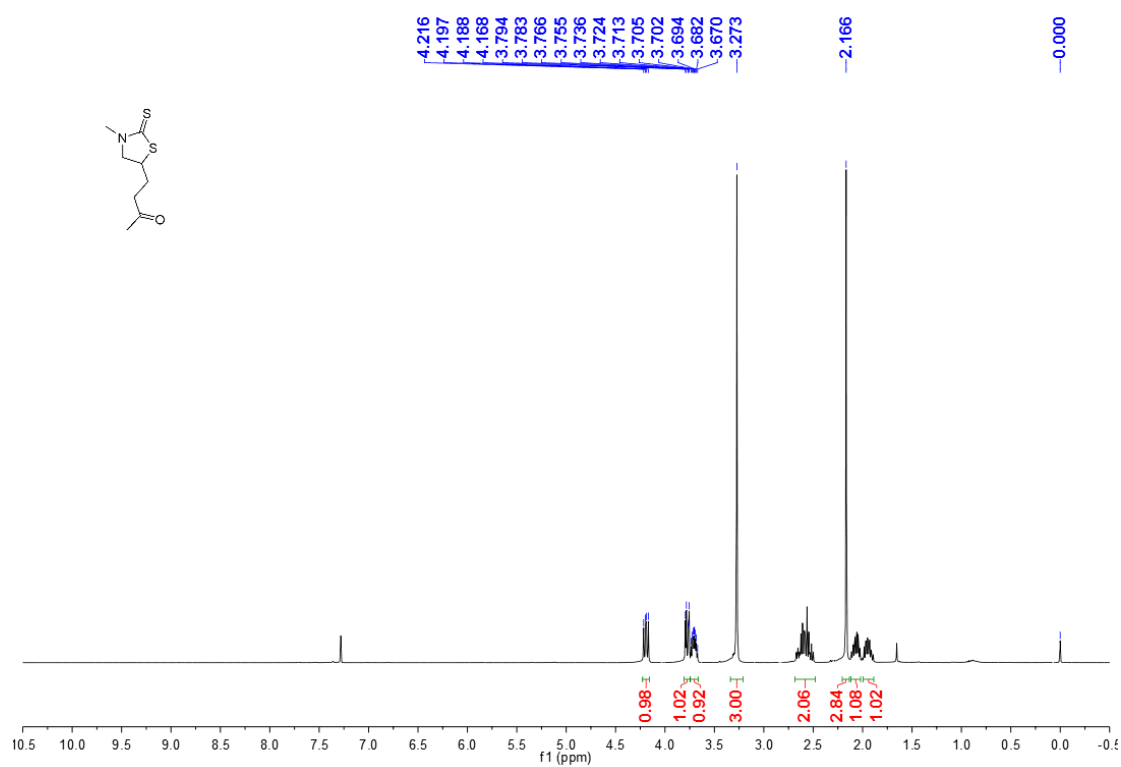
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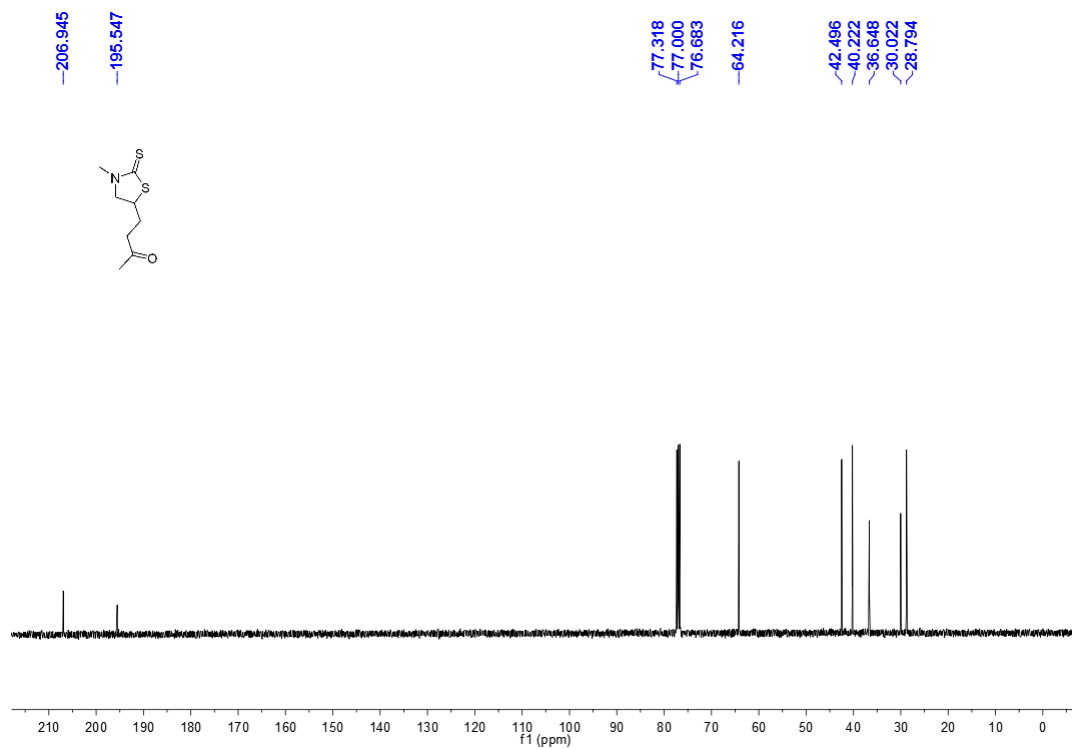
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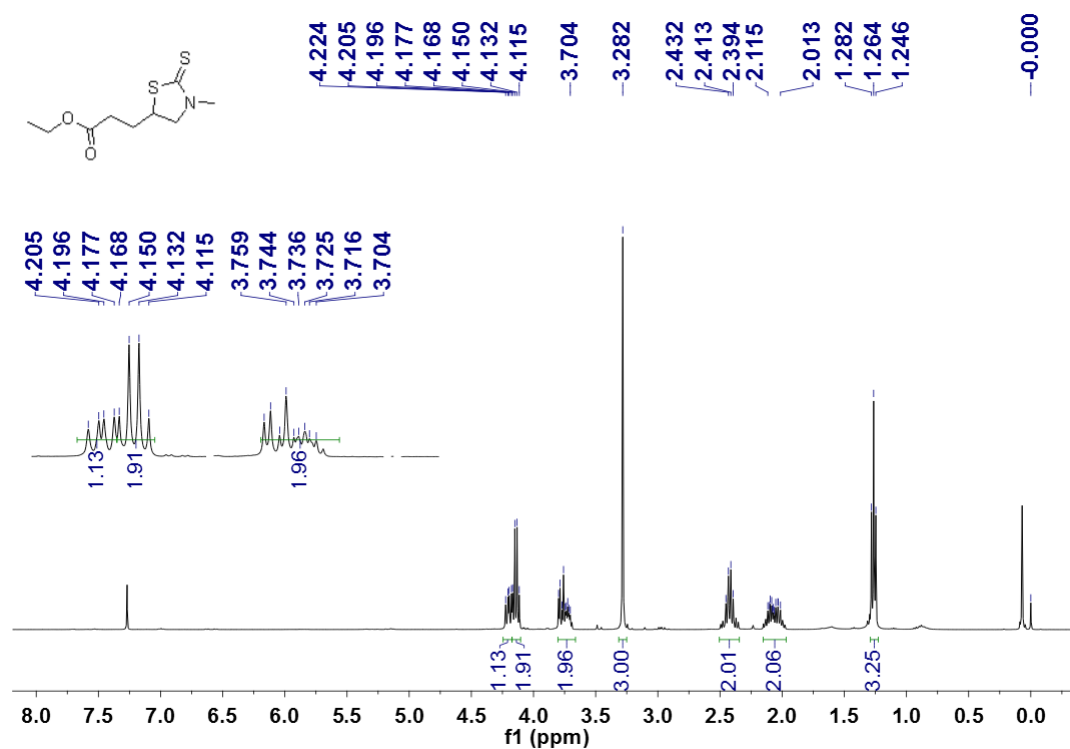
^1H NMR (400 MHz, CDCl_3) spectrum of **2f**



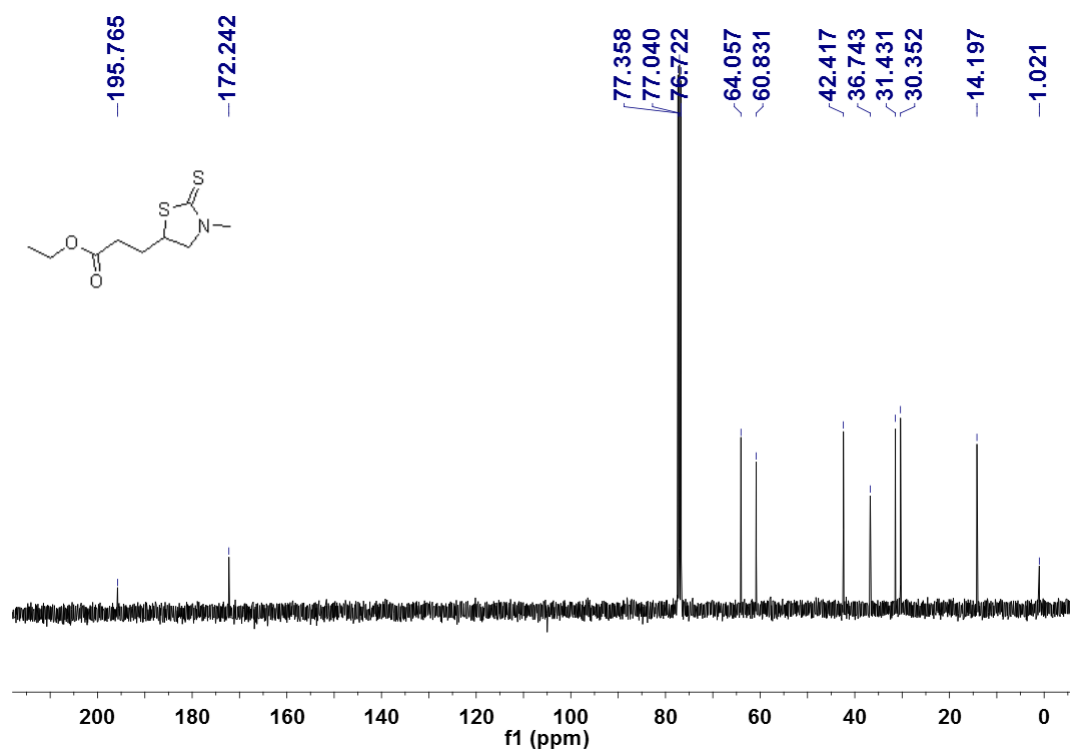
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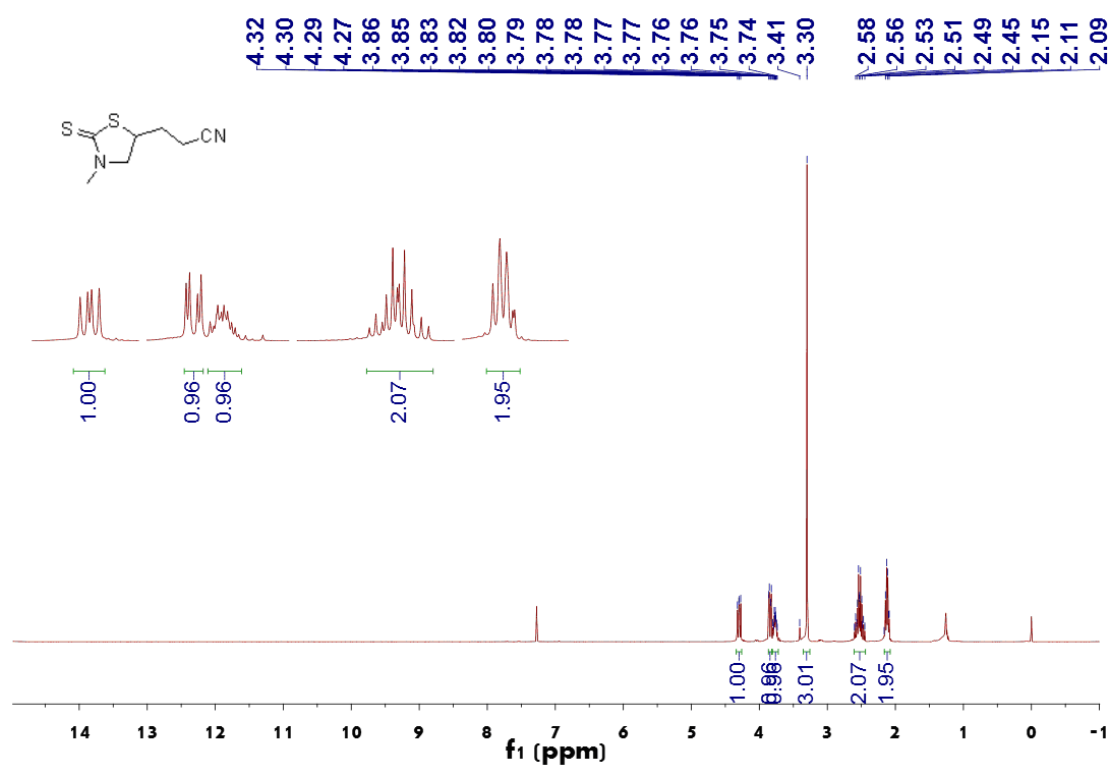
^1H NMR (400 MHz, CDCl_3) spectrum of **2g**



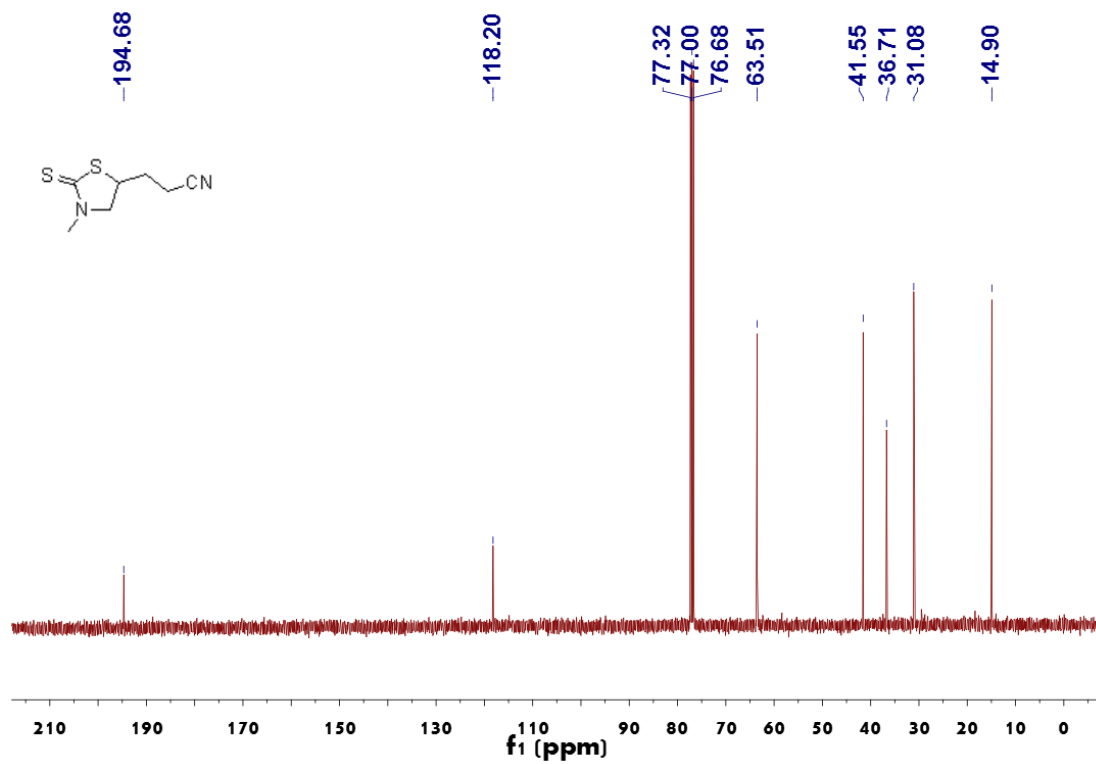
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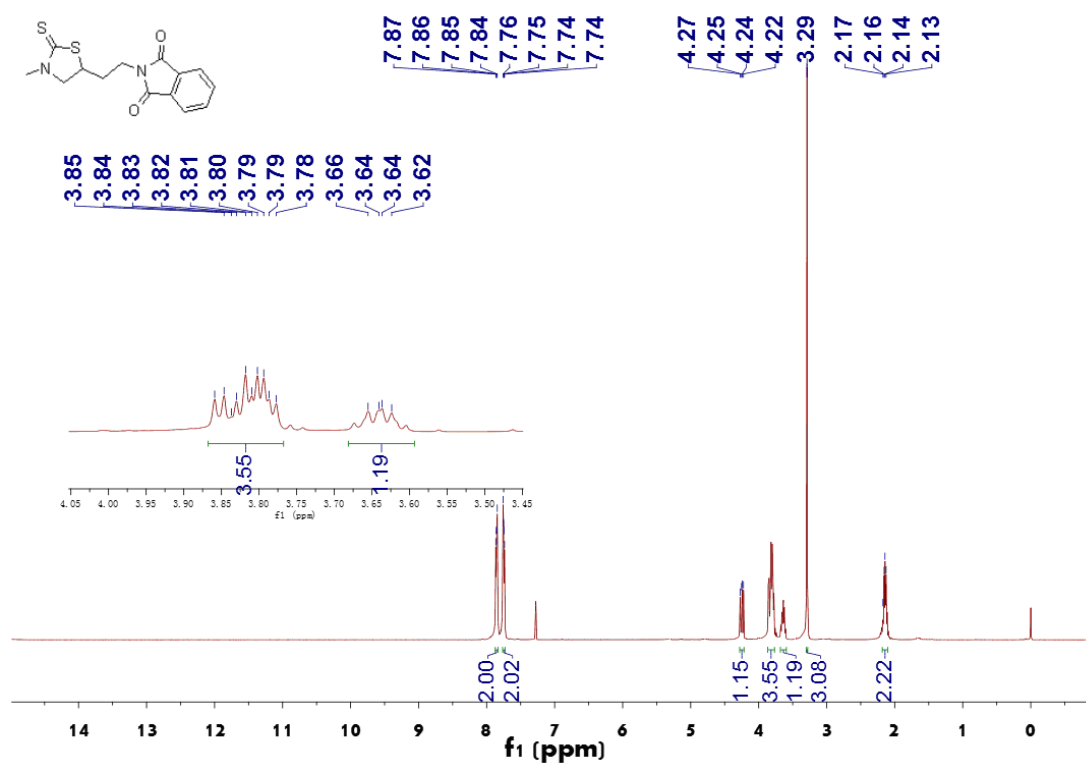
^1H NMR (400 MHz, CDCl_3) spectrum of **2h**



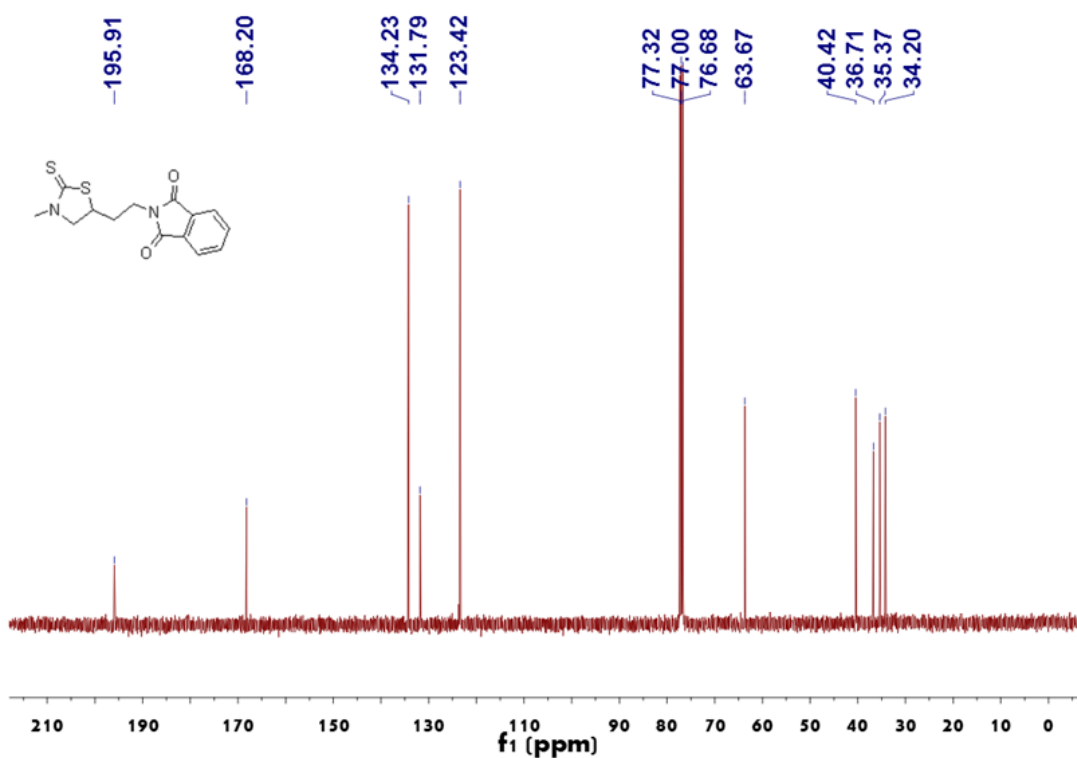
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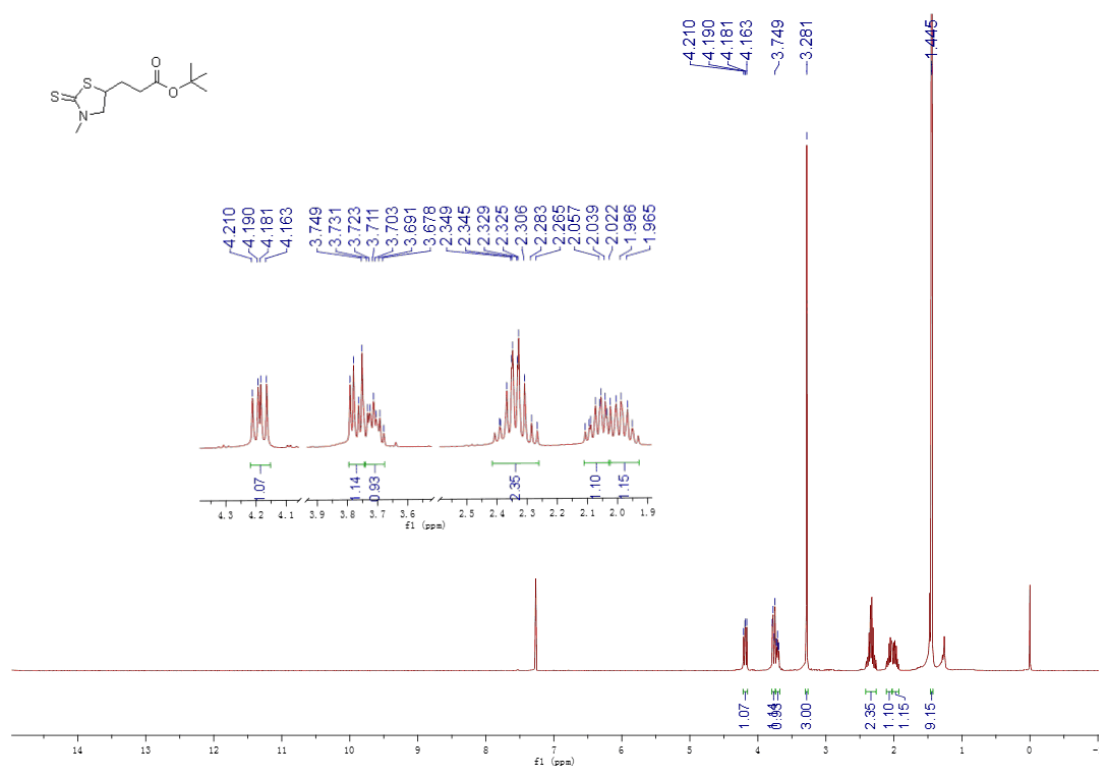
^1H NMR (400 MHz, CDCl_3) spectrum of **2i**



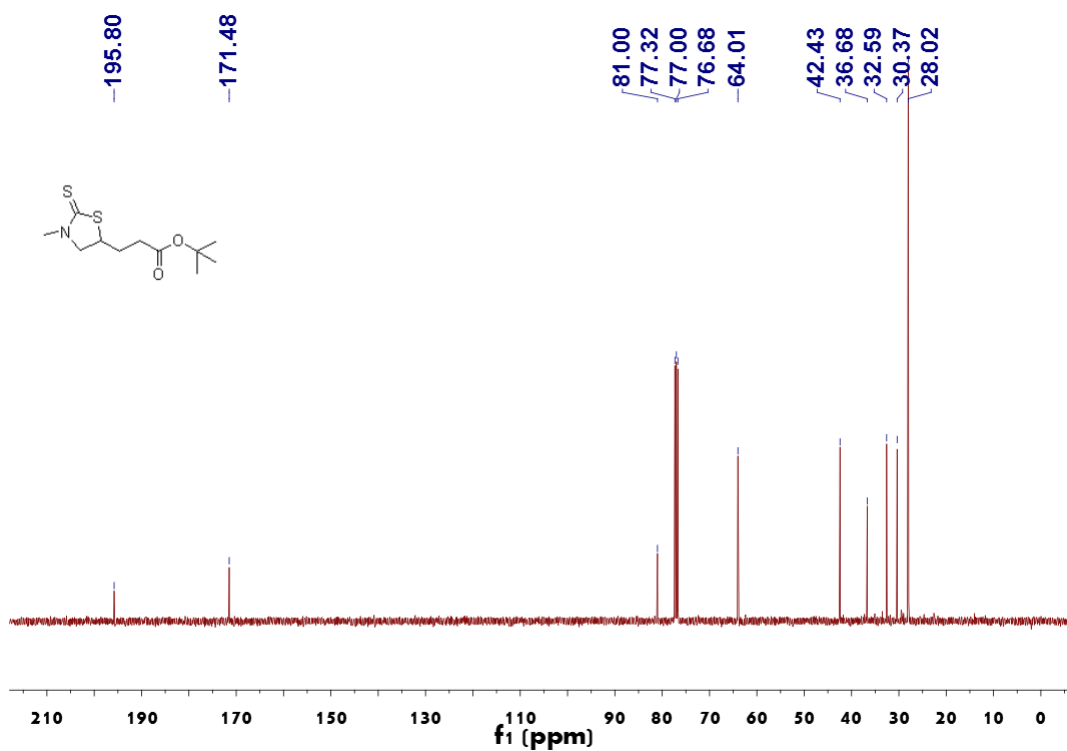
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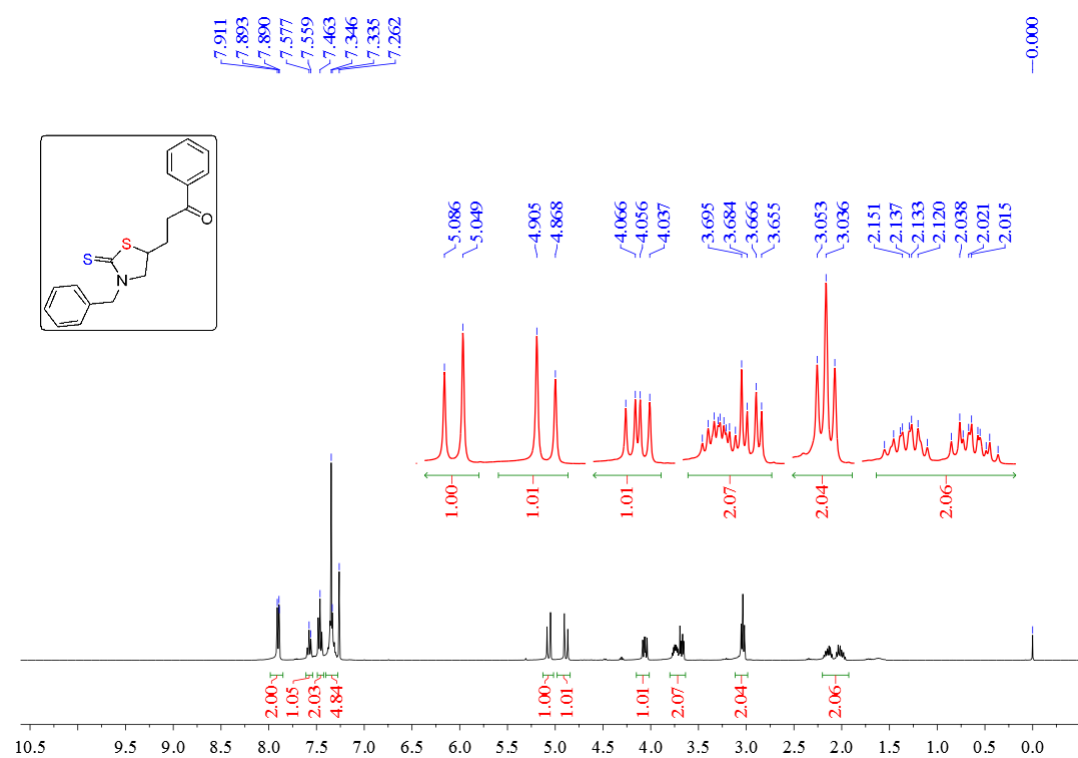
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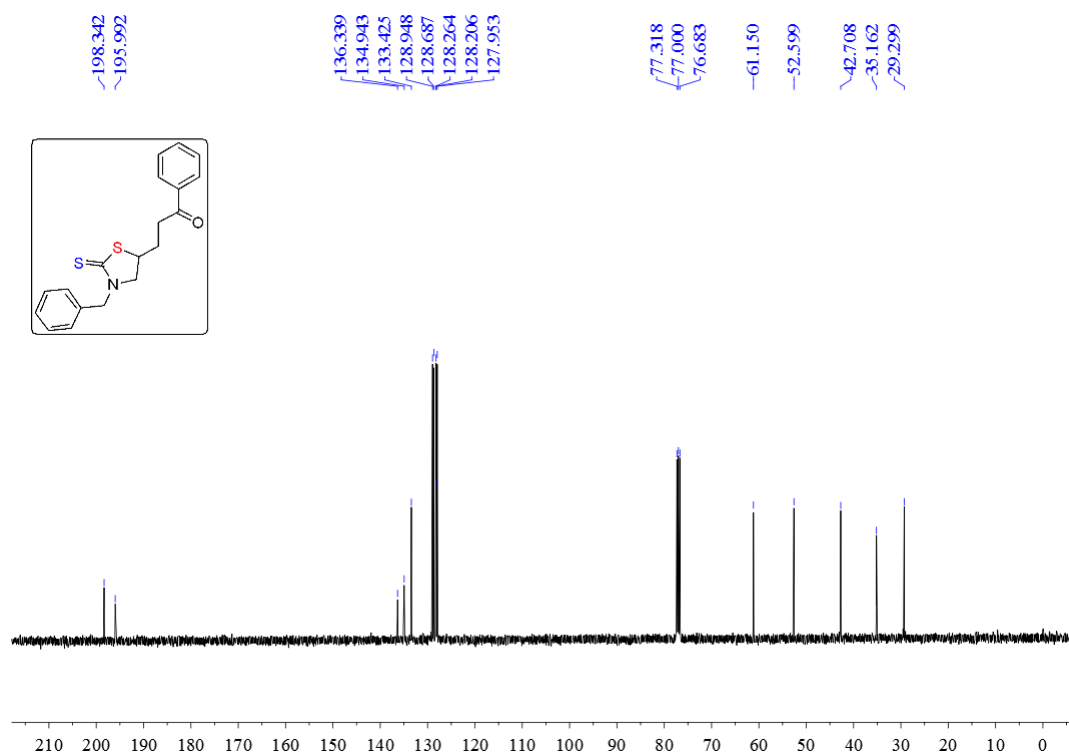
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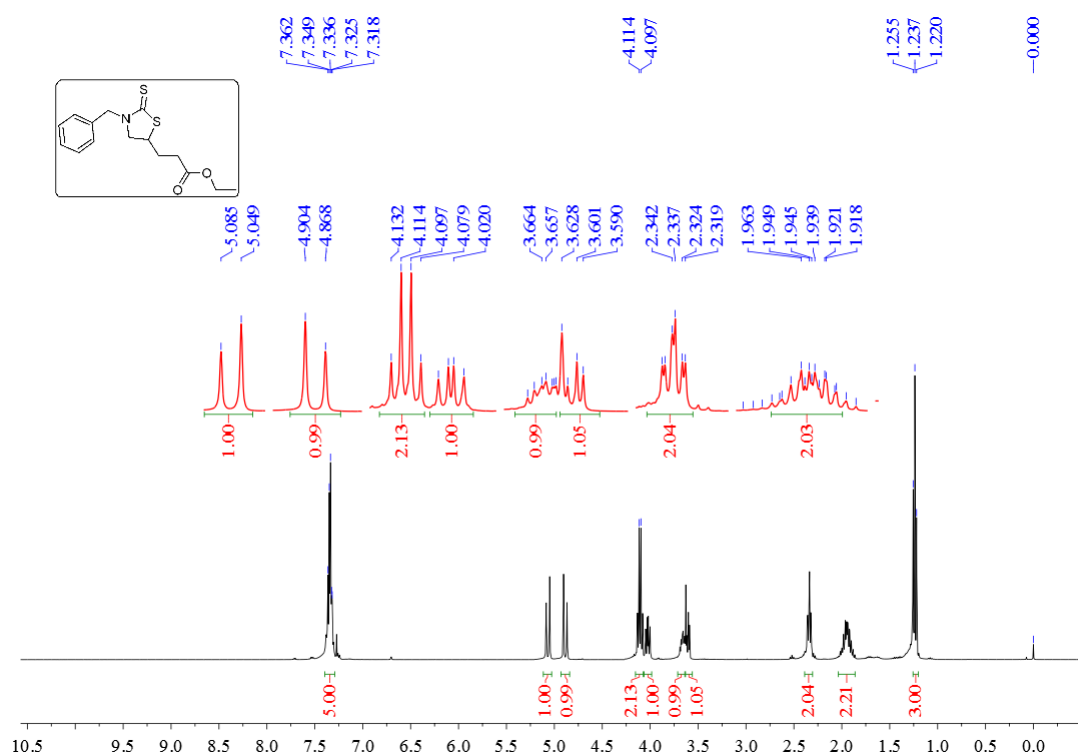
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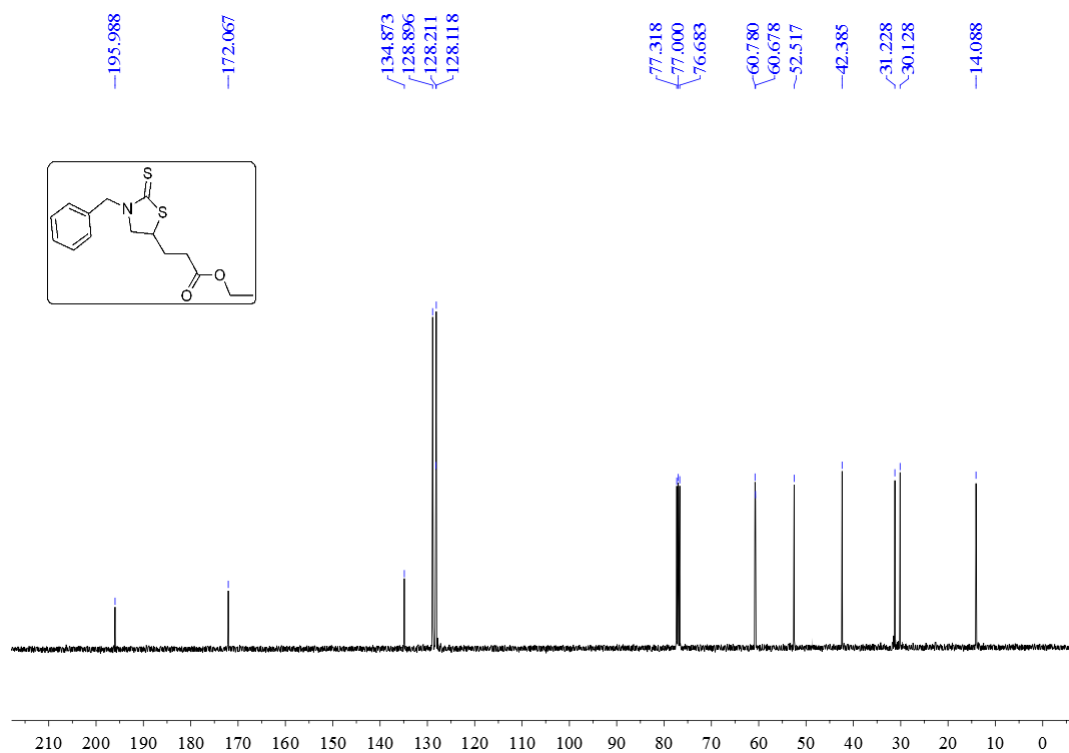
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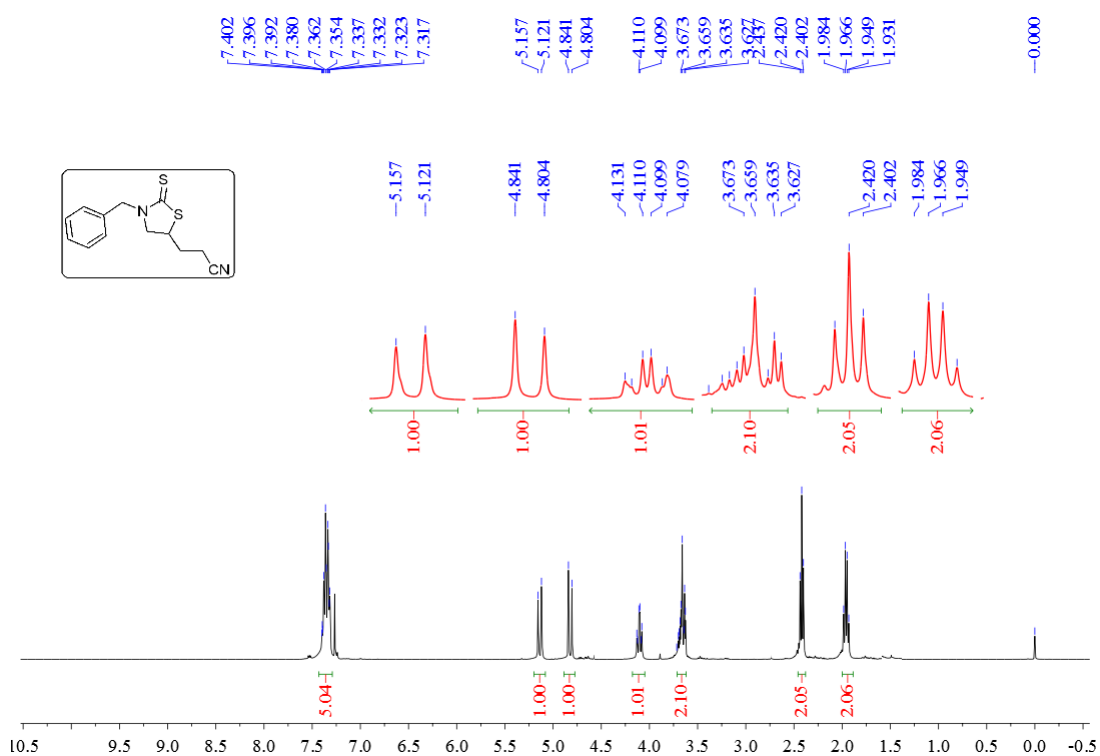
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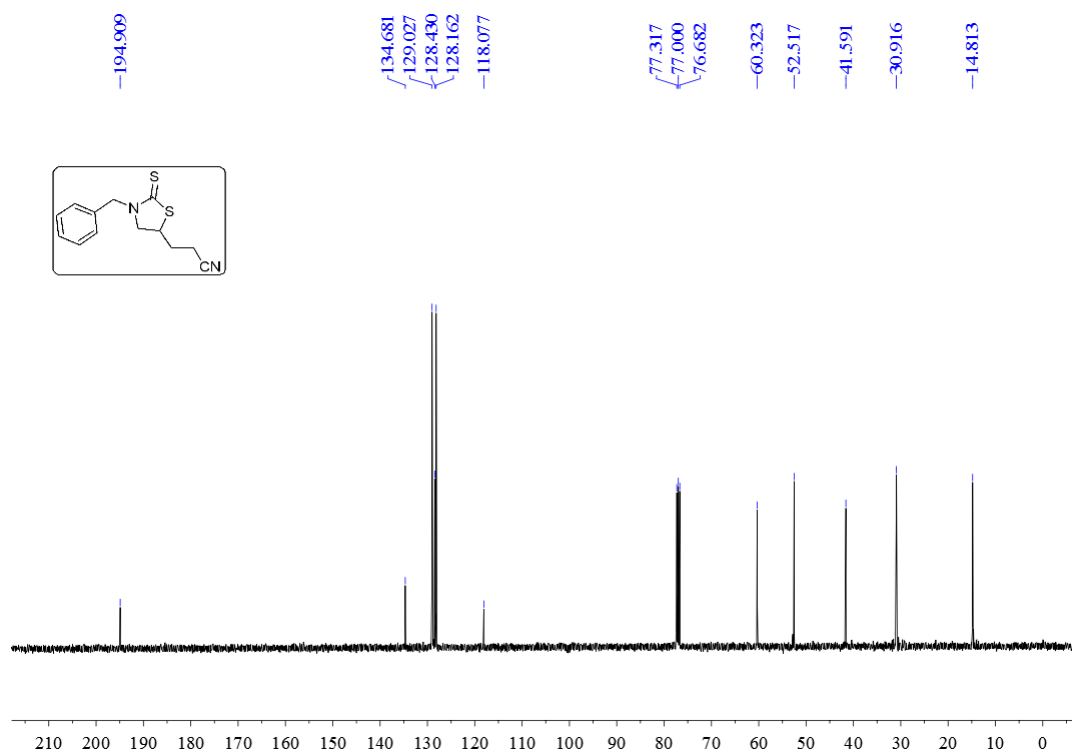
^{13}C NMR (101 MHz, CDCl_3) spectrum of **2I**



^1H NMR (400 MHz, CDCl_3) spectrum of **2m**



^{13}C NMR (101 MHz, CDCl_3) spectrum of **2m**



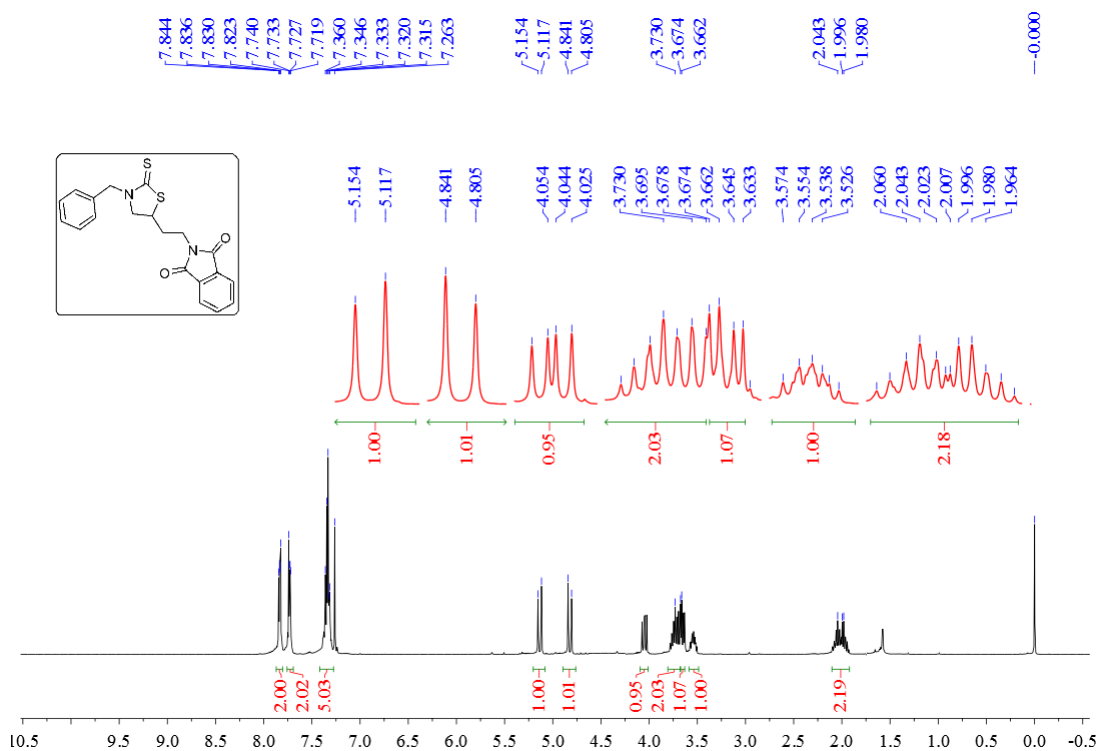
[illegible]

Chemical structure: CC(=O)CSC(=S)NCC1=CC=CC=C1

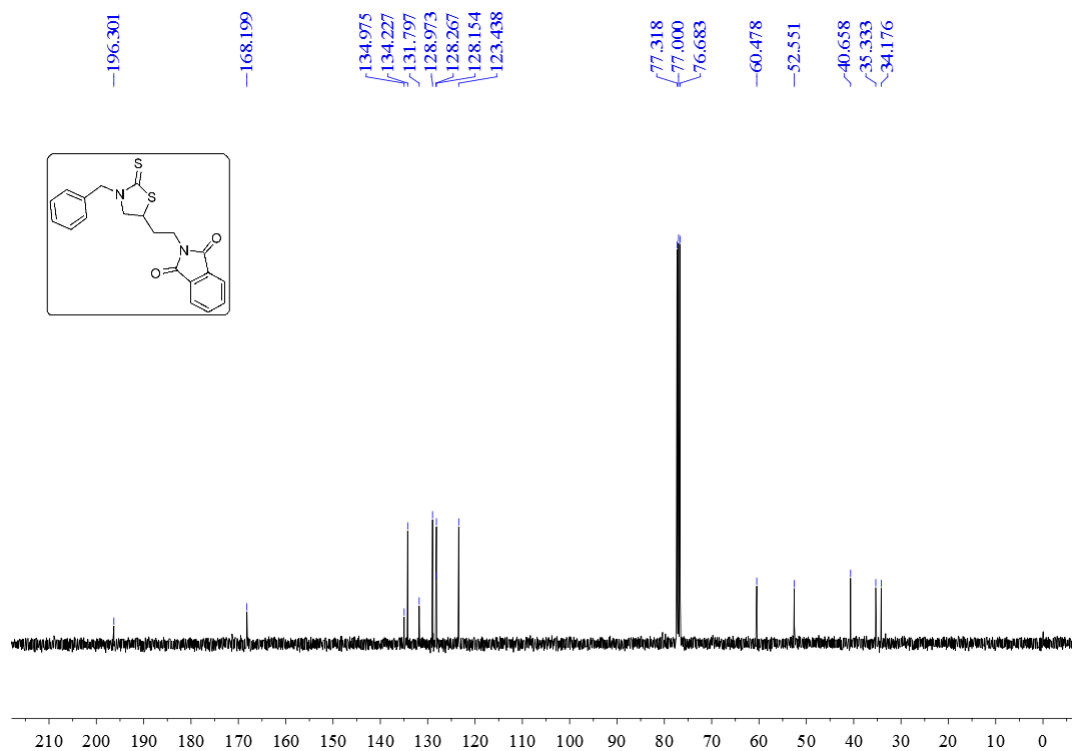
¹³C NMR spectrum (ppm):

- 206.884
- 195.937
- 134.902
- 128.925
- 128.795
- 128.261
- 128.200
- 128.108
- 77.317
- 77.000
- 76.682
- 61.017
- 52.538
- 42.456
- 40.019
- 29.991
- 28.746

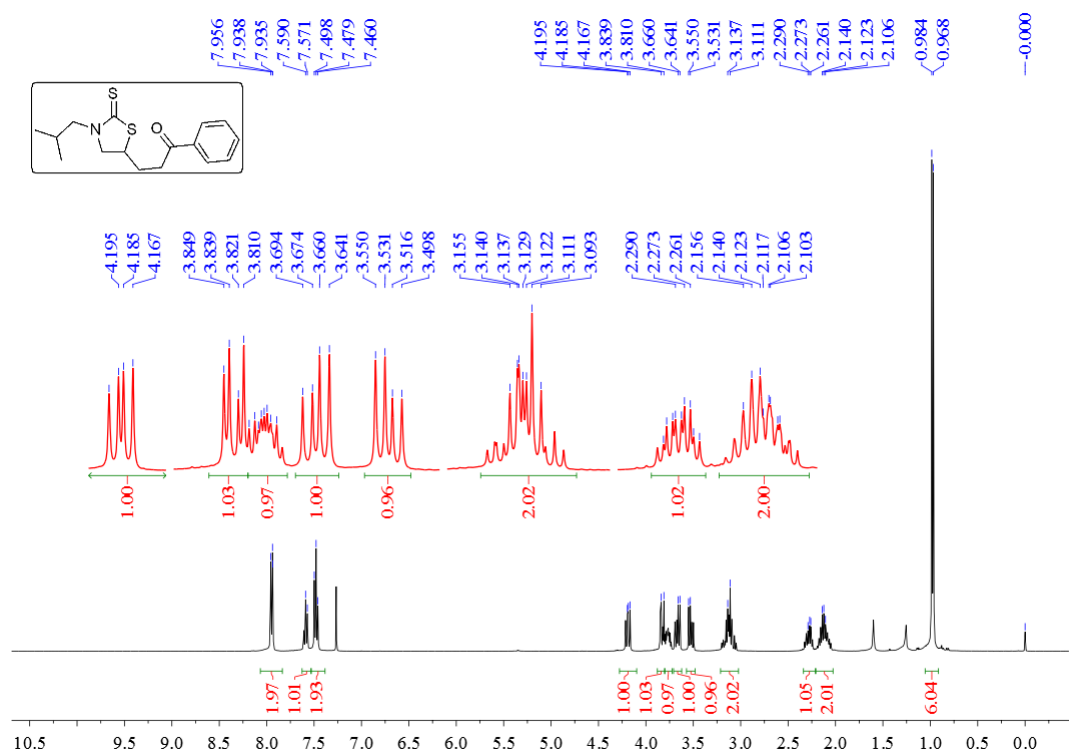
^1H NMR (400 MHz, CDCl_3) spectrum of **2o**



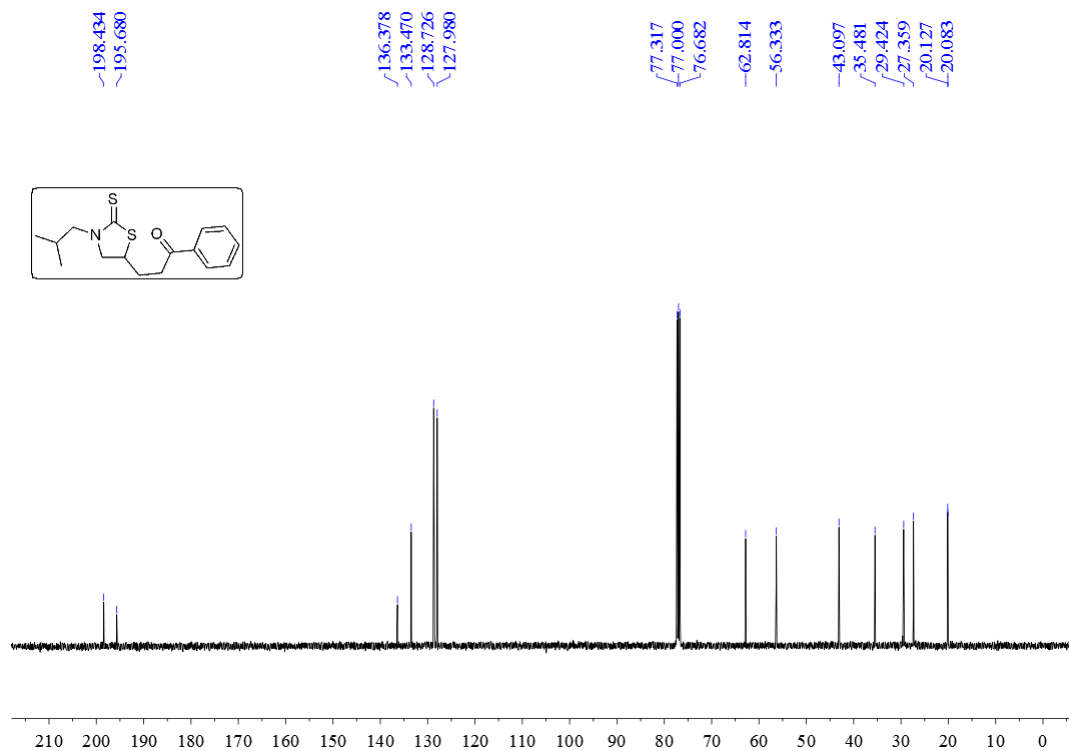
^{13}C NMR (101 MHz, CDCl_3) spectrum of **2o**



^1H NMR (400 MHz, CDCl_3) spectrum of **2p**



^{13}C NMR (101 MHz, CDCl_3) spectrum of **2p**



Chemical structure: CC(C)CN1C(=S)SC(C)CC1=O

¹H NMR spectrum (400 MHz, CDCl₃) showing peaks and integrations:

- 7.275 (s, 1H)
- 4.170, 4.151, 4.141, 4.122 (m, 2H)
- 3.779, 3.768, 3.750, 3.740, 3.670, 3.651, 3.637, 3.618, 3.550, 3.531 (m, 8H)
- 2.627, 2.612, 2.608, 2.593, 2.579, 2.561 (m, 2H)
- 2.123, 2.104, 2.090, 2.087 (m, 2H)
- 1.928, 1.912, 1.907, 1.903 (m, 2H)
- 1.000 (d, 6H)
- 0.977, 0.960 (m, 2H)
- 0.000 (s, 1H)

Chemical structure of 2-isopropyl-4-methyl-1,3-dithiane-5-carbonyl is shown above the spectrum.

Peak list (ppm):

Peak (ppm)
206.984
195.630
77.317
77.000
76.682
62.714
56.287
42.878
40.378
30.048
28.861
27.320
20.095
20.050