

N-Heterocyclic Carbene-Catalyzed Aza-Michael Addition

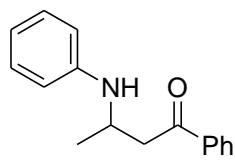
*Qiang Kang and Yugen Zhang**

Contribution from Institute of Bioengineering and Nanotechnology (IBN), Agency for Science,
Technology and Research (A*STAR), 31 Biopolis Way, The Nanos, Singapore 138669

Email: ygzhang@ibn.a-star.edu.sg

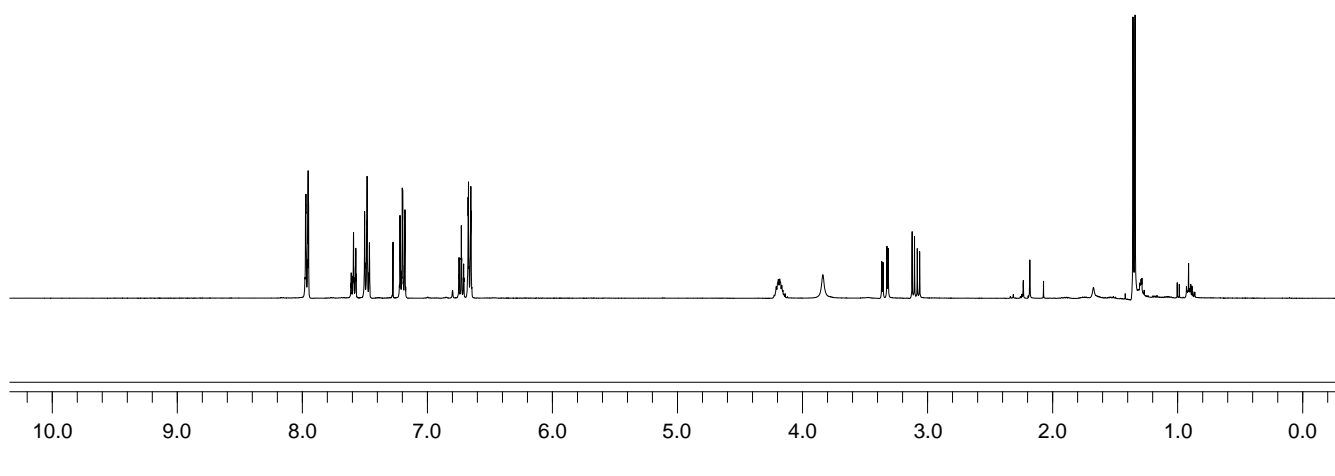
Supporting Information Available

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

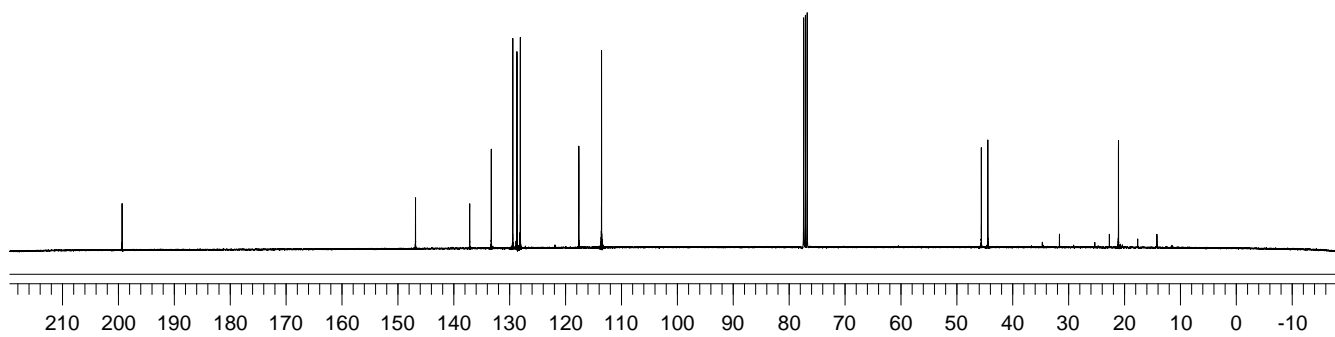


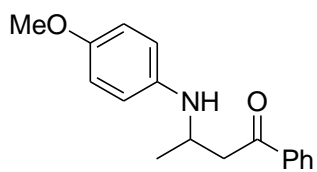
4a

^1H NMR spectrum
(400 MHz, CDCl_3)



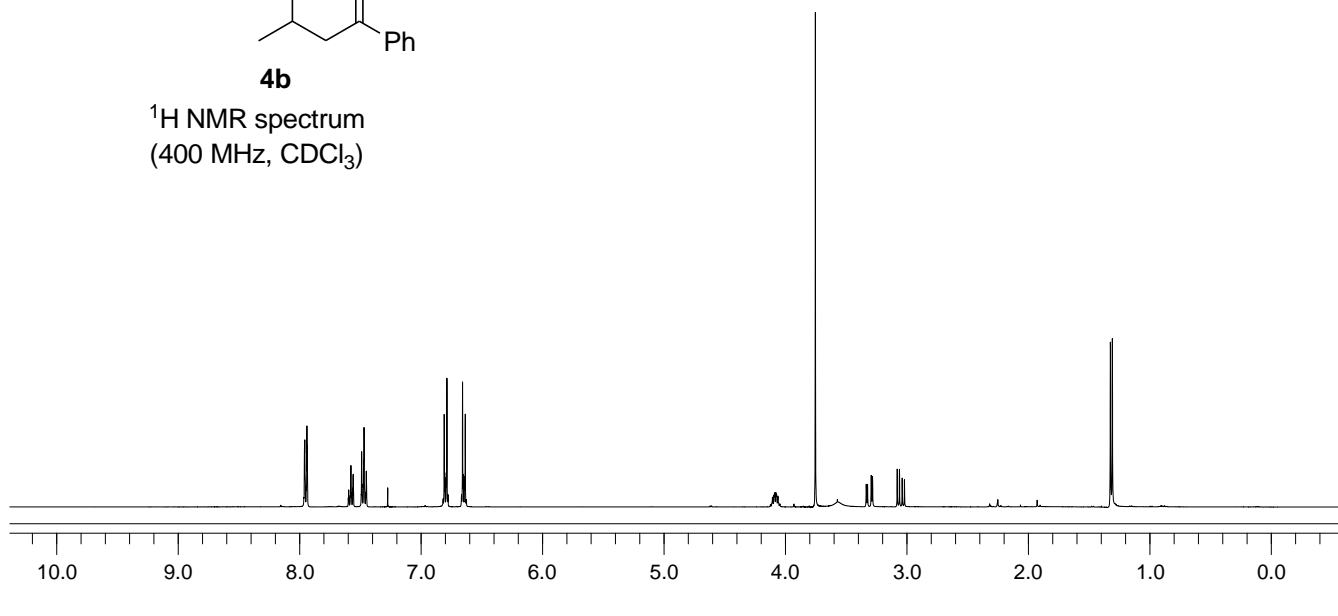
^{13}C NMR spectrum
(100 MHz, CDCl_3)



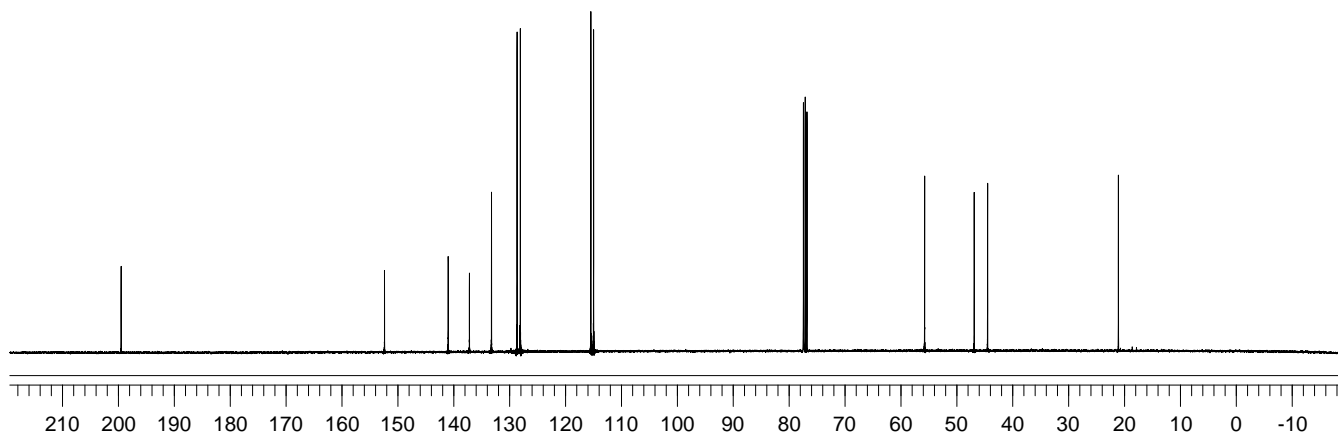


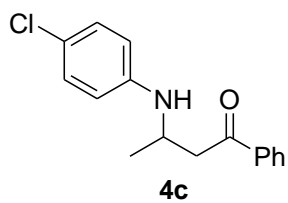
4b

¹H NMR spectrum
(400 MHz, CDCl₃)

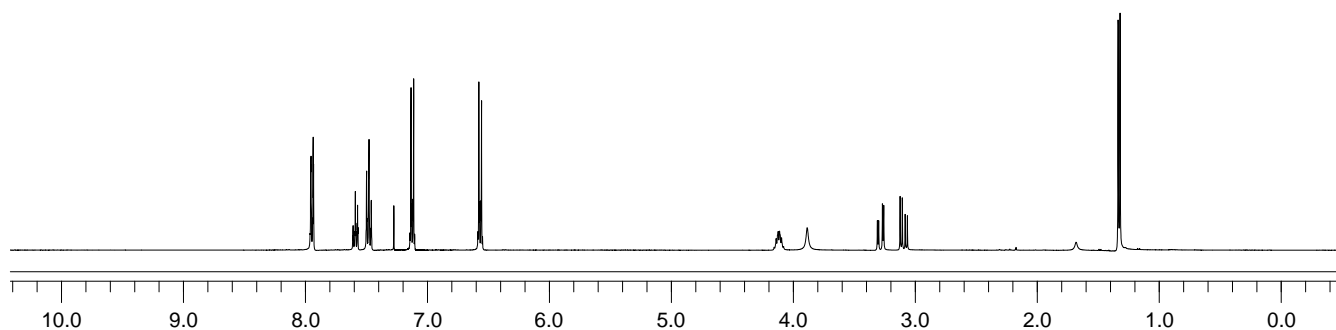


¹³C NMR spectrum
(100 MHz, CDCl₃)

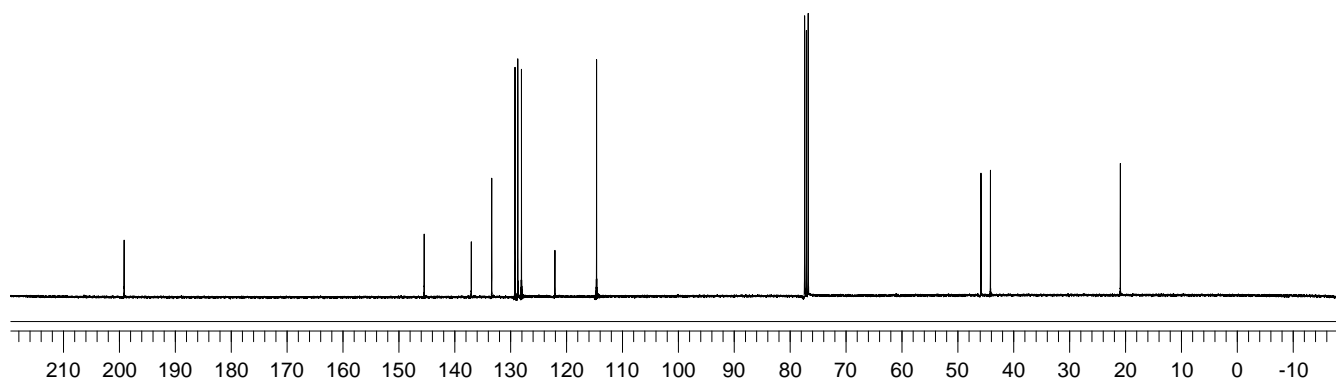


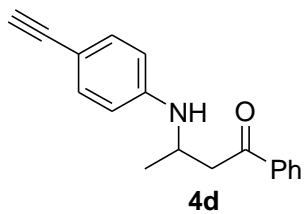


^1H NMR spectrum
(400 MHz, CDCl_3)

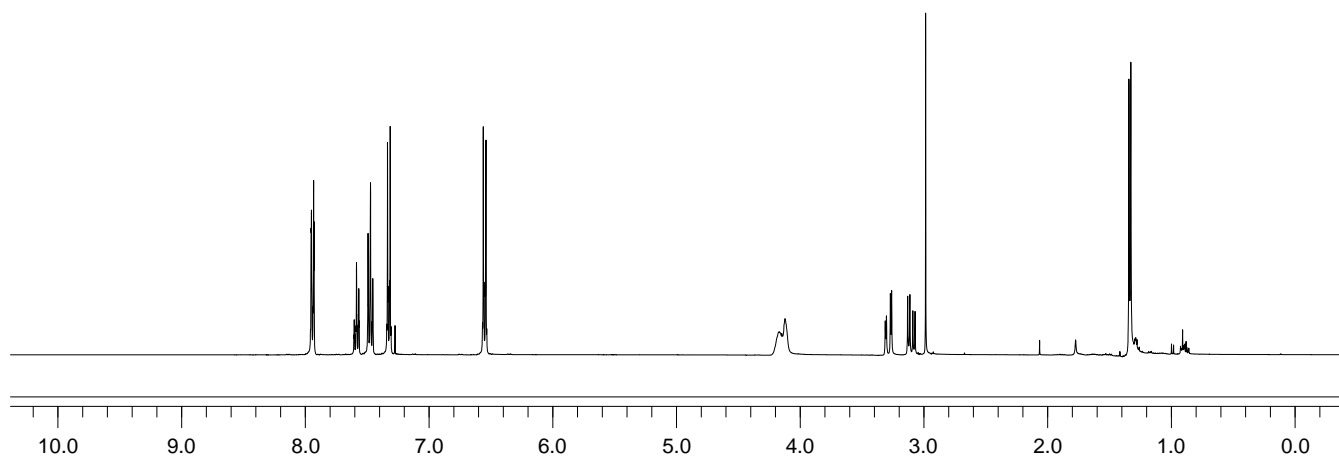


^{13}C NMR spectrum
(100 MHz, CDCl_3)

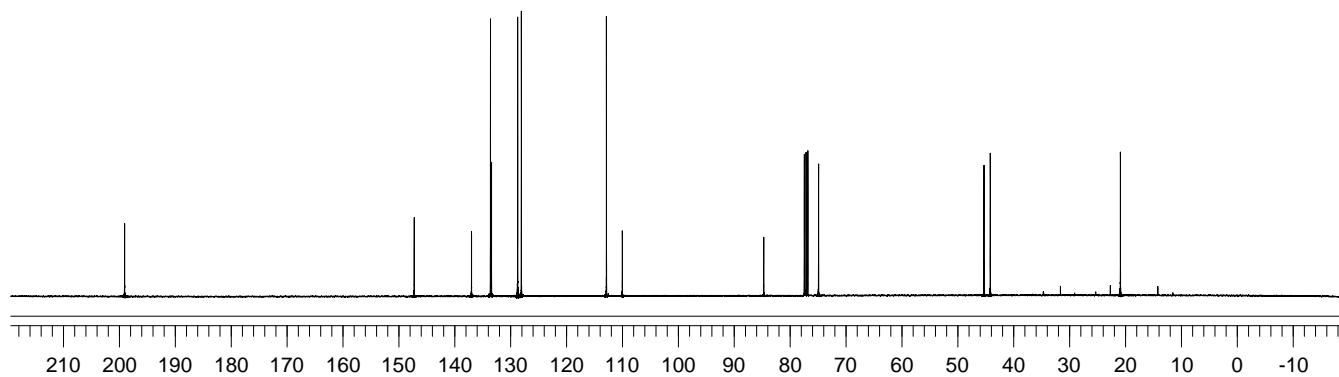


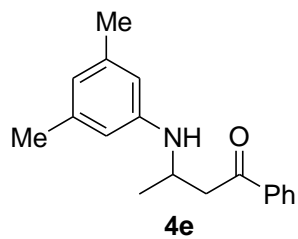


^1H NMR spectrum
(400 MHz, CDCl_3)

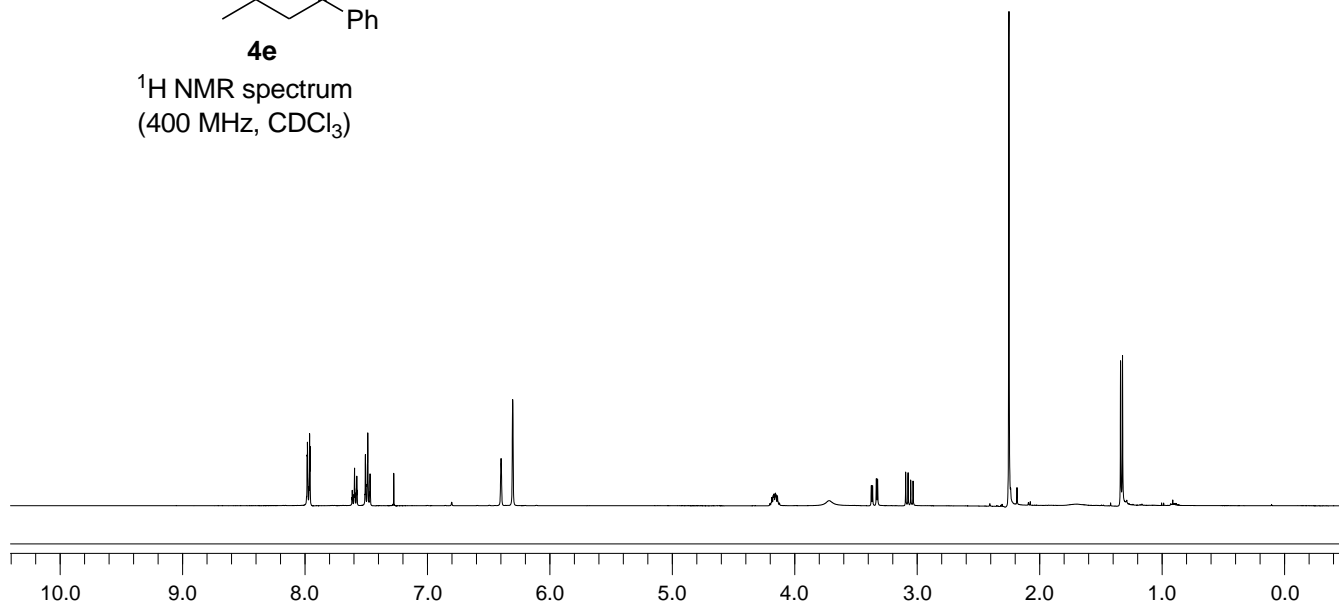


^{13}C NMR spectrum
(100 MHz, CDCl_3)

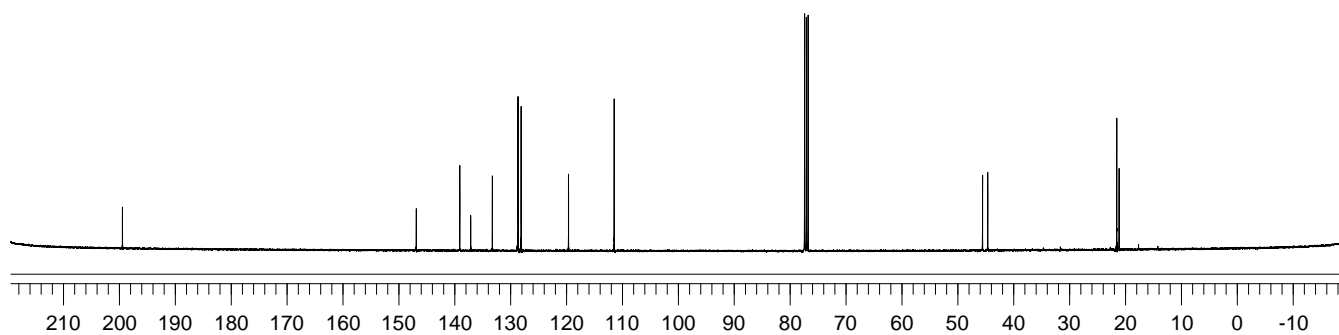


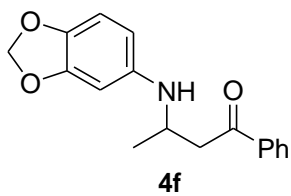


4e
¹H NMR spectrum
(400 MHz, CDCl₃)

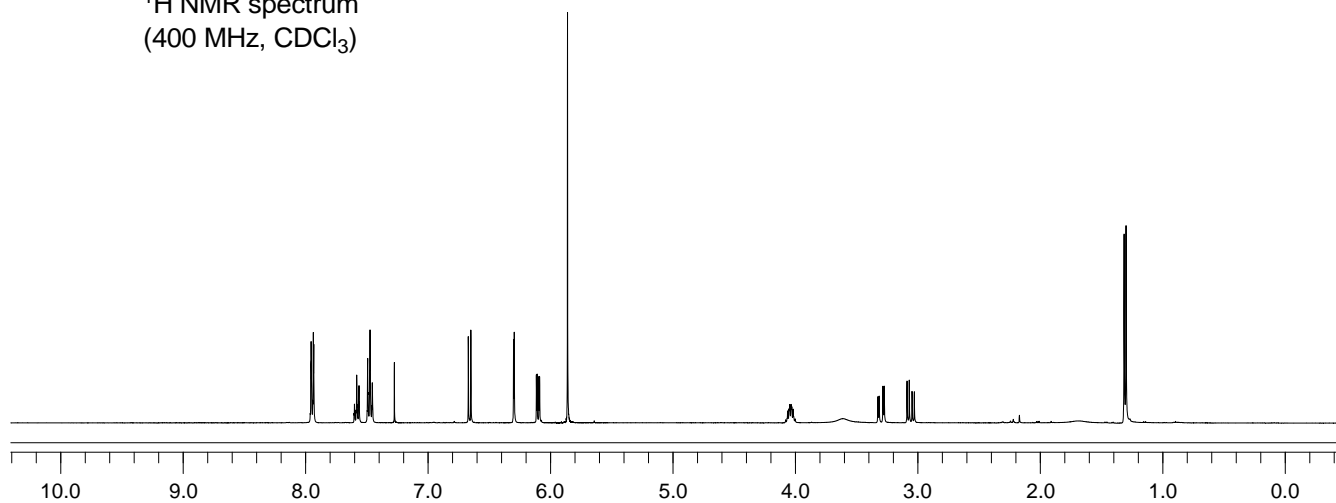


¹³C NMR spectrum
(100 MHz, CDCl₃)

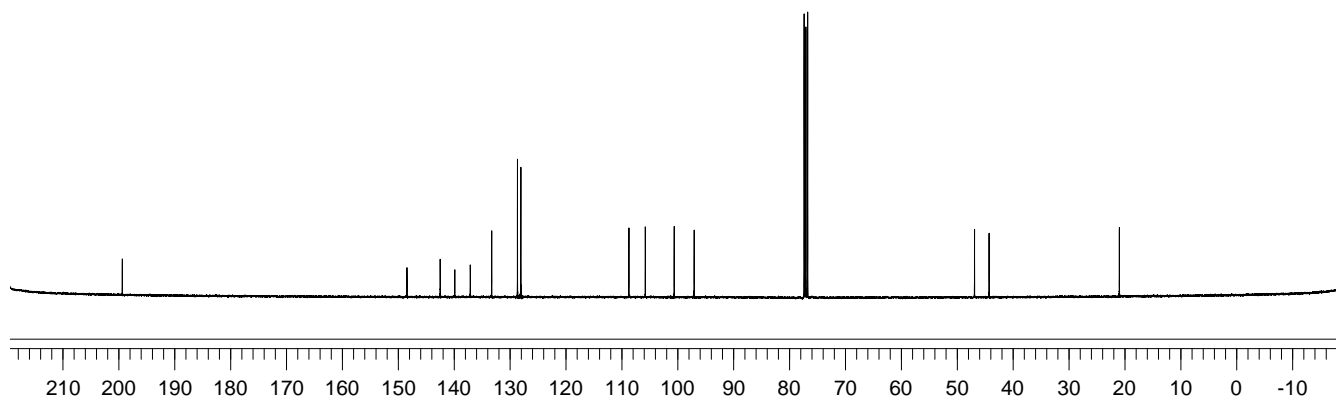


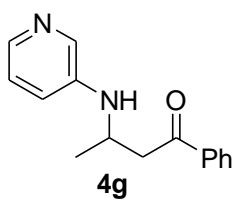


^1H NMR spectrum
(400 MHz, CDCl_3)

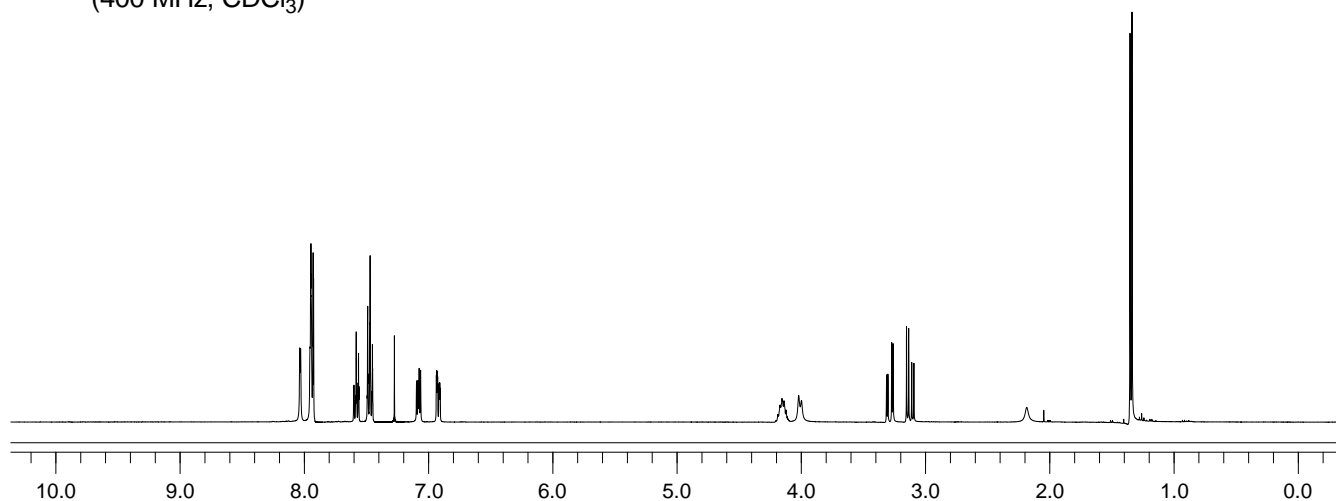


^{13}C NMR spectrum
(100 MHz, CDCl_3)

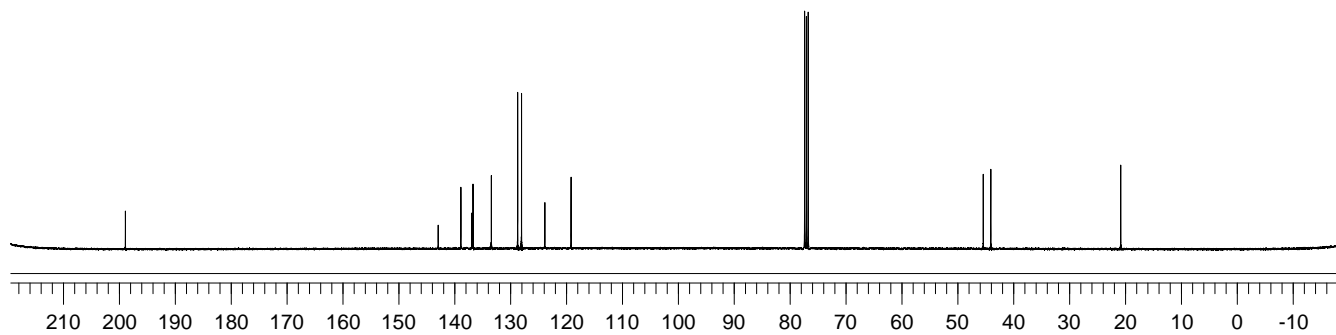


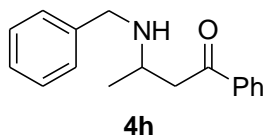


¹H NMR spectrum
(400 MHz, CDCl₃)

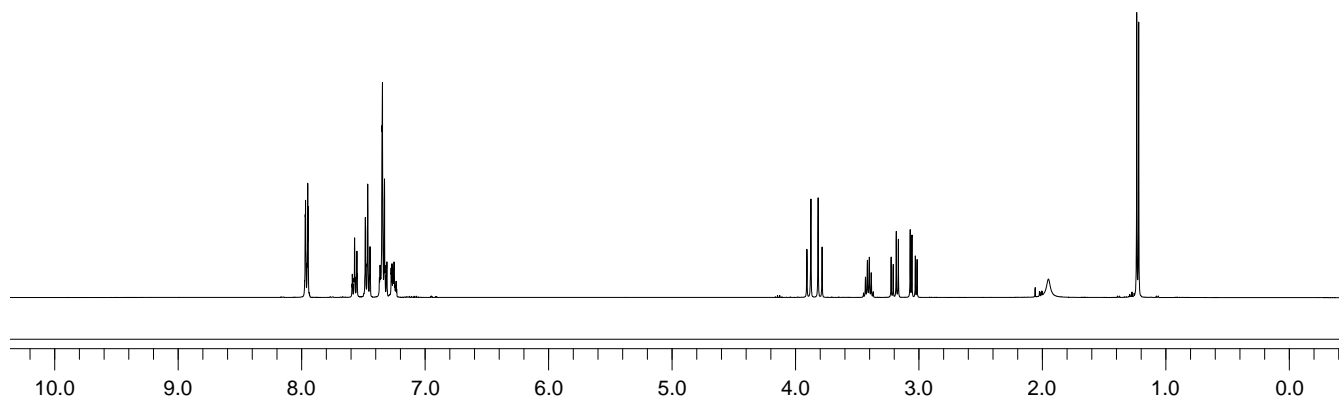


¹³C NMR spectrum
(100 MHz, CDCl₃)

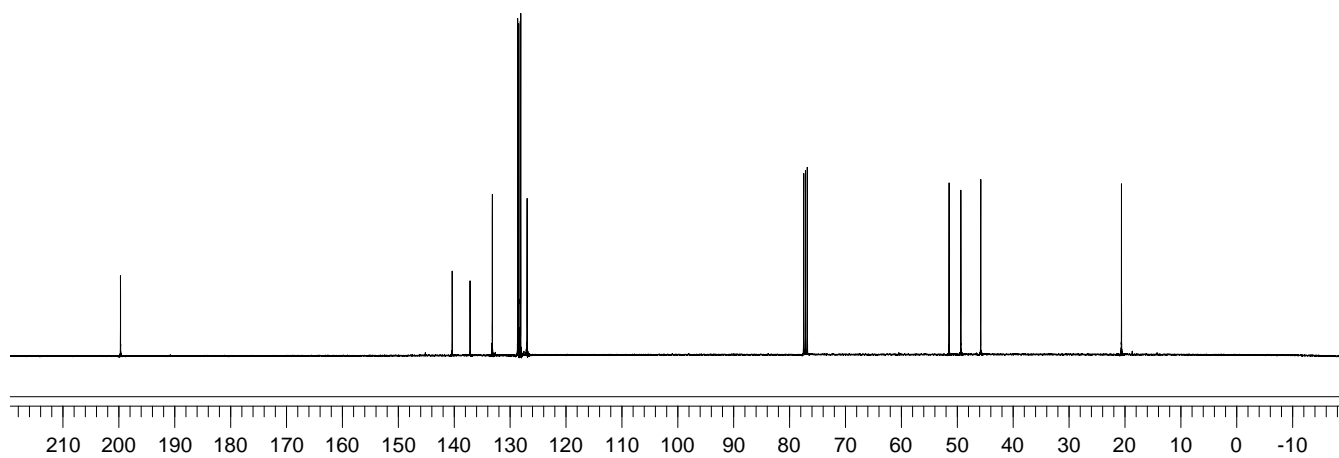


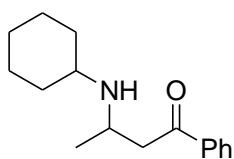


¹H NMR spectrum
(400 MHz, CDCl₃)



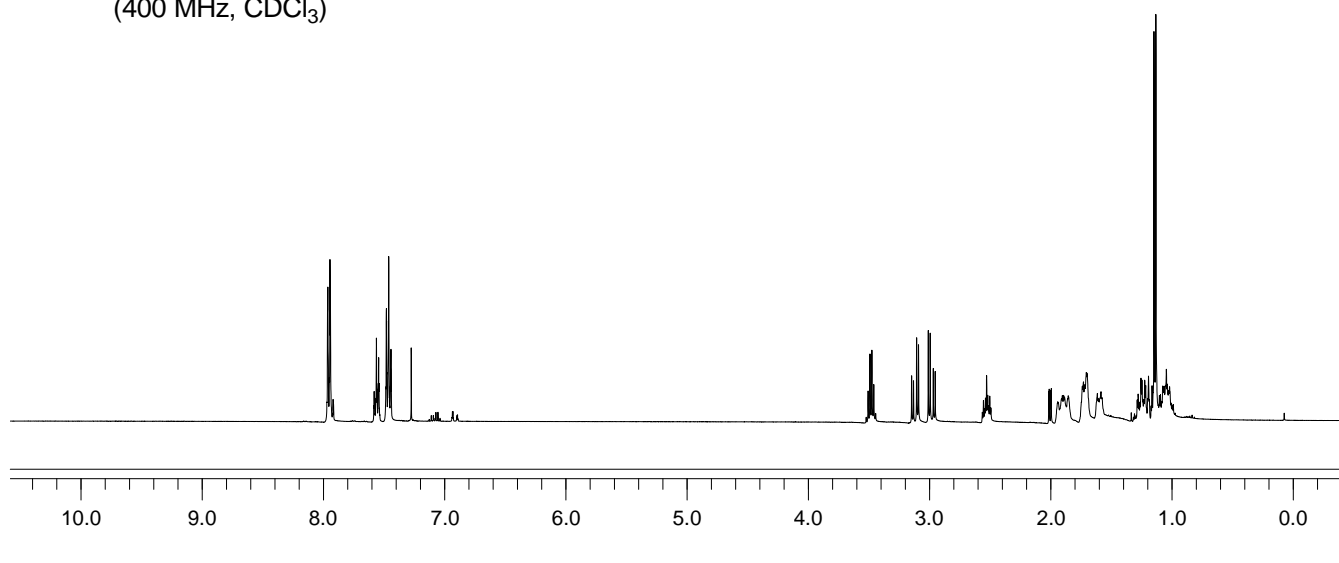
¹³C NMR spectrum
(100 MHz, CDCl₃)



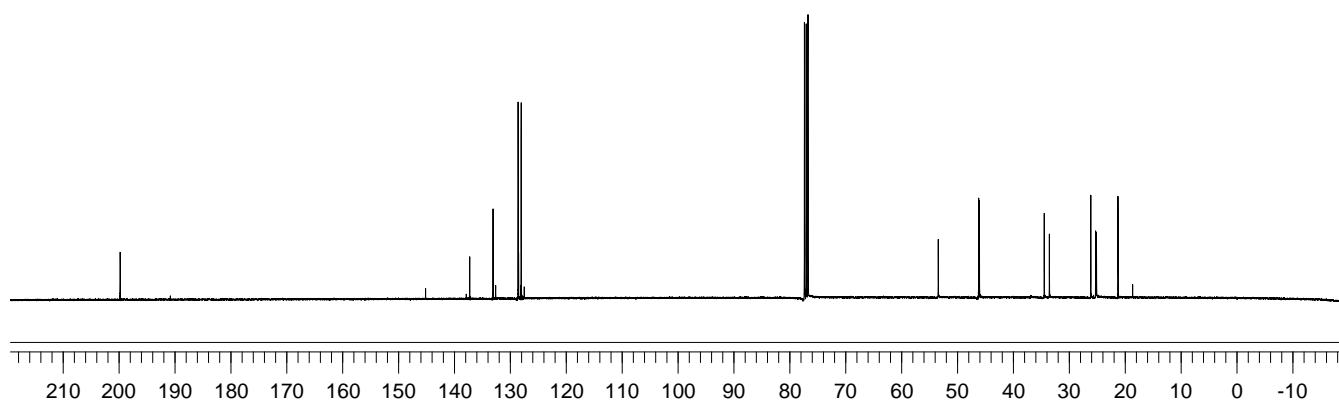


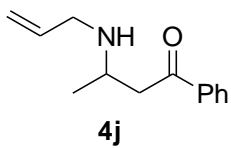
4i

^1H NMR spectrum
(400 MHz, CDCl_3)

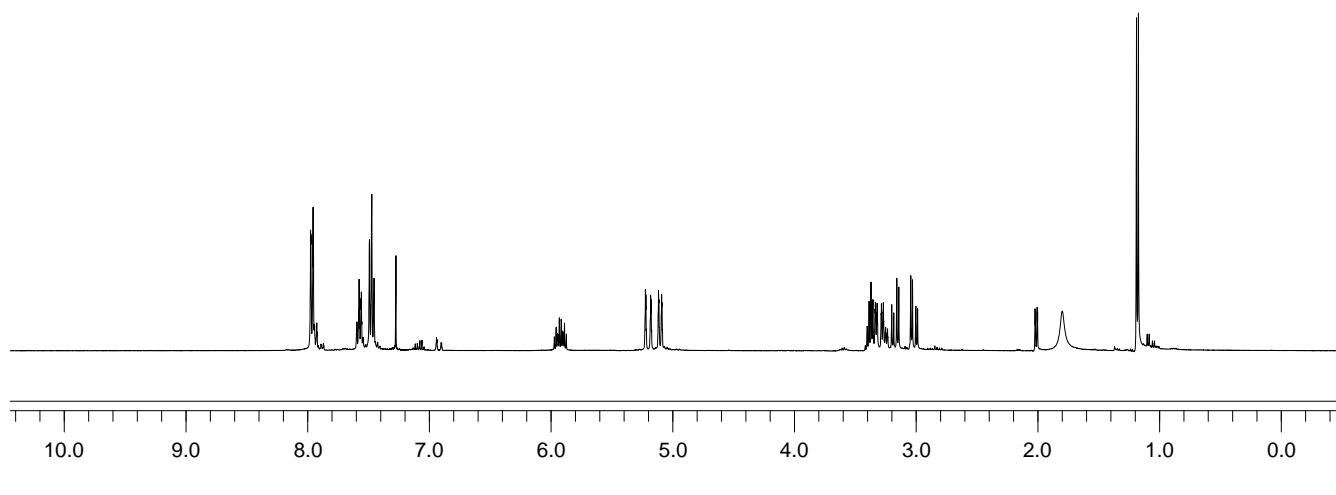


^{13}C NMR spectrum
(100 MHz, CDCl_3)

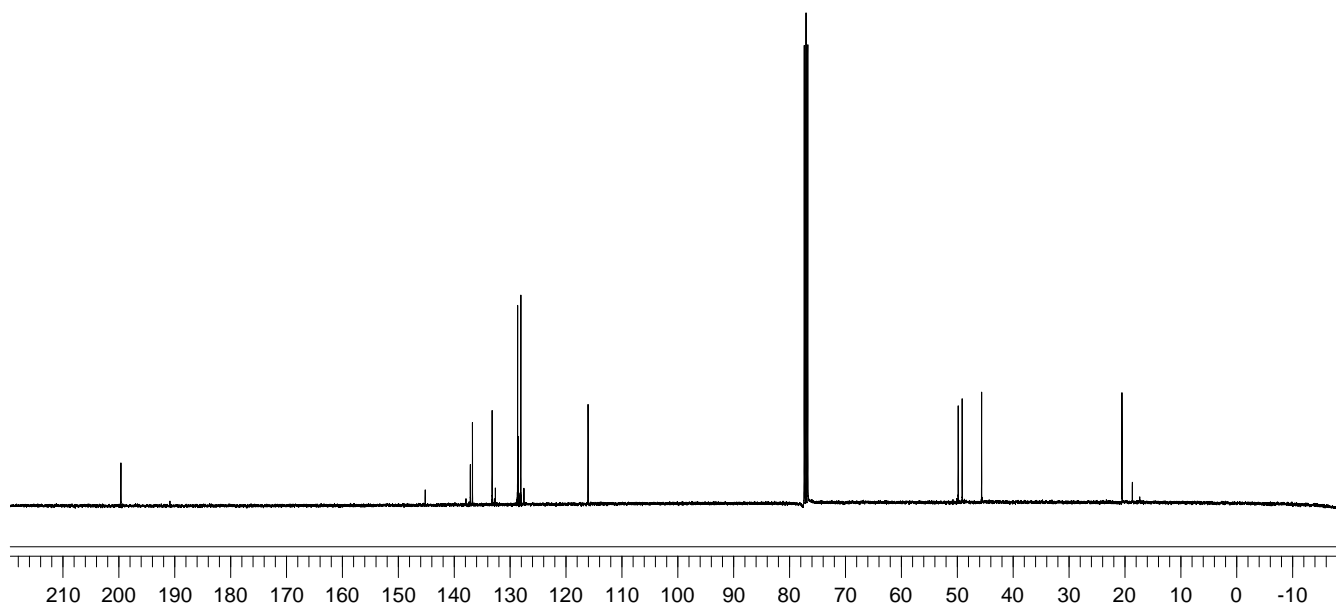


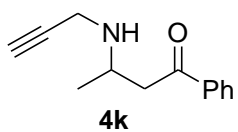


¹H NMR spectrum
(400 MHz, CDCl₃)

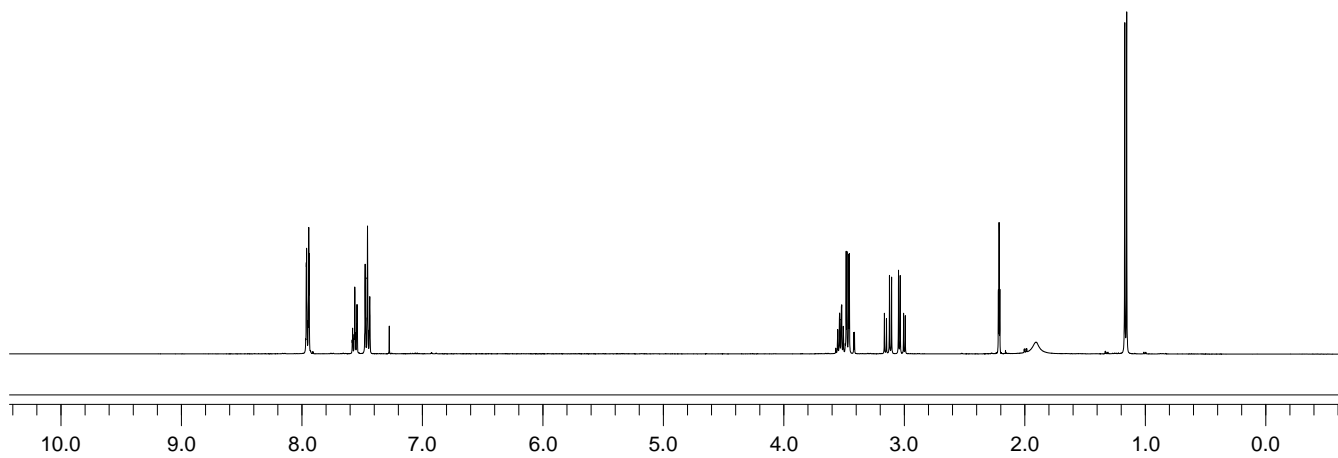


¹³C NMR spectrum
(100 MHz, CDCl₃)

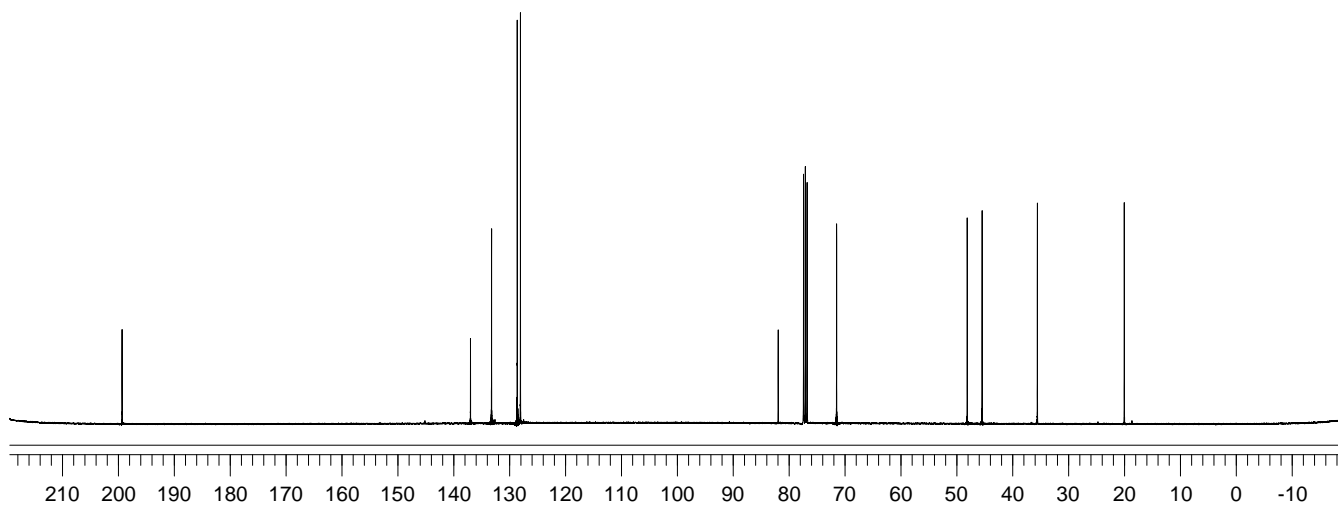


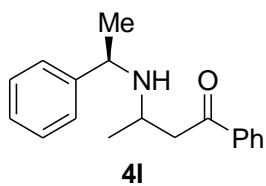


^1H NMR spectrum
(400 MHz, CDCl_3)

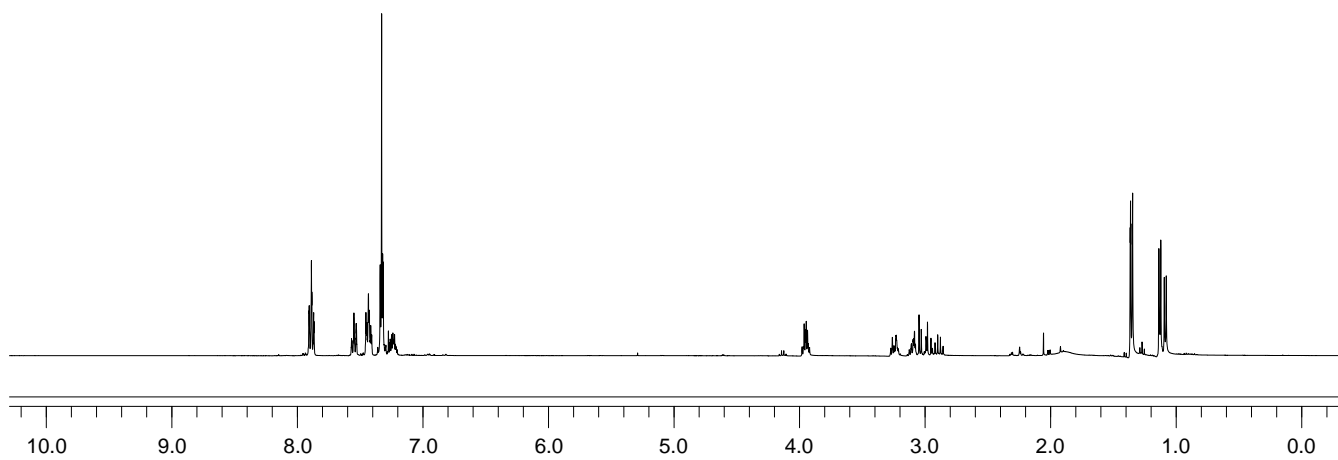


^{13}C NMR spectrum
(100 MHz, CDCl_3)

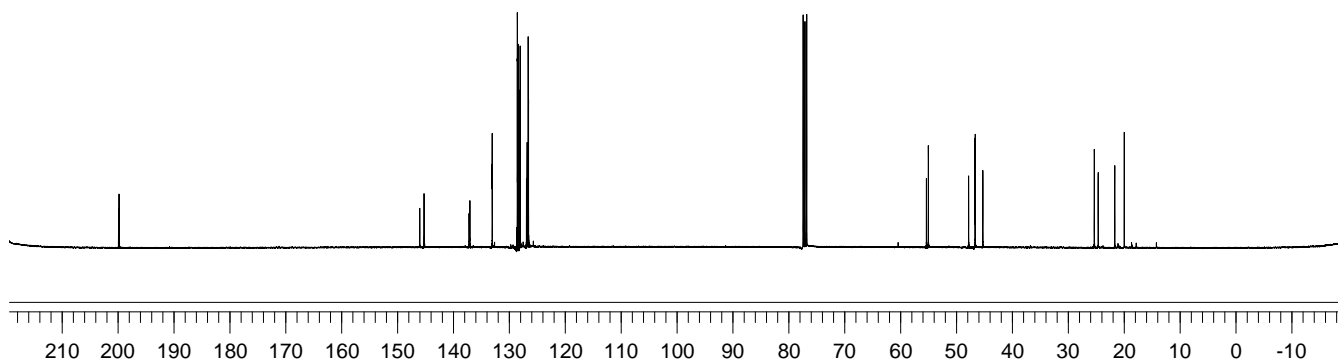


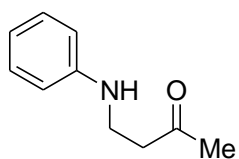


¹H NMR spectrum
(400 MHz, CDCl₃)



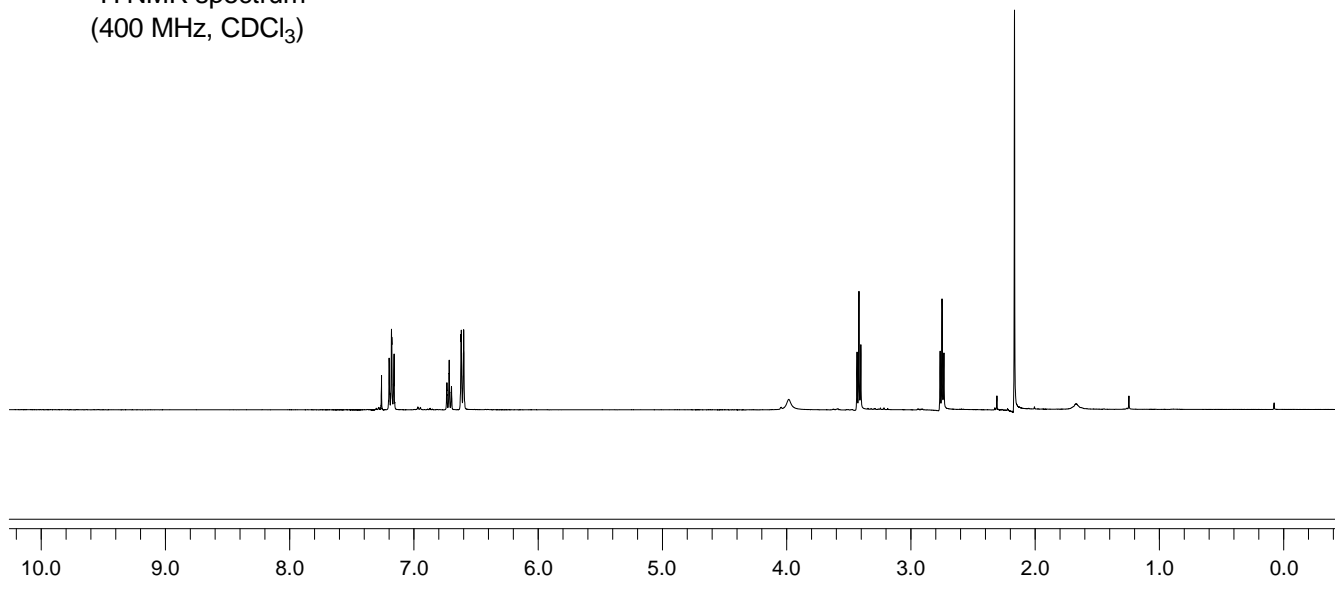
¹³C NMR spectrum
(100 MHz, CDCl₃)



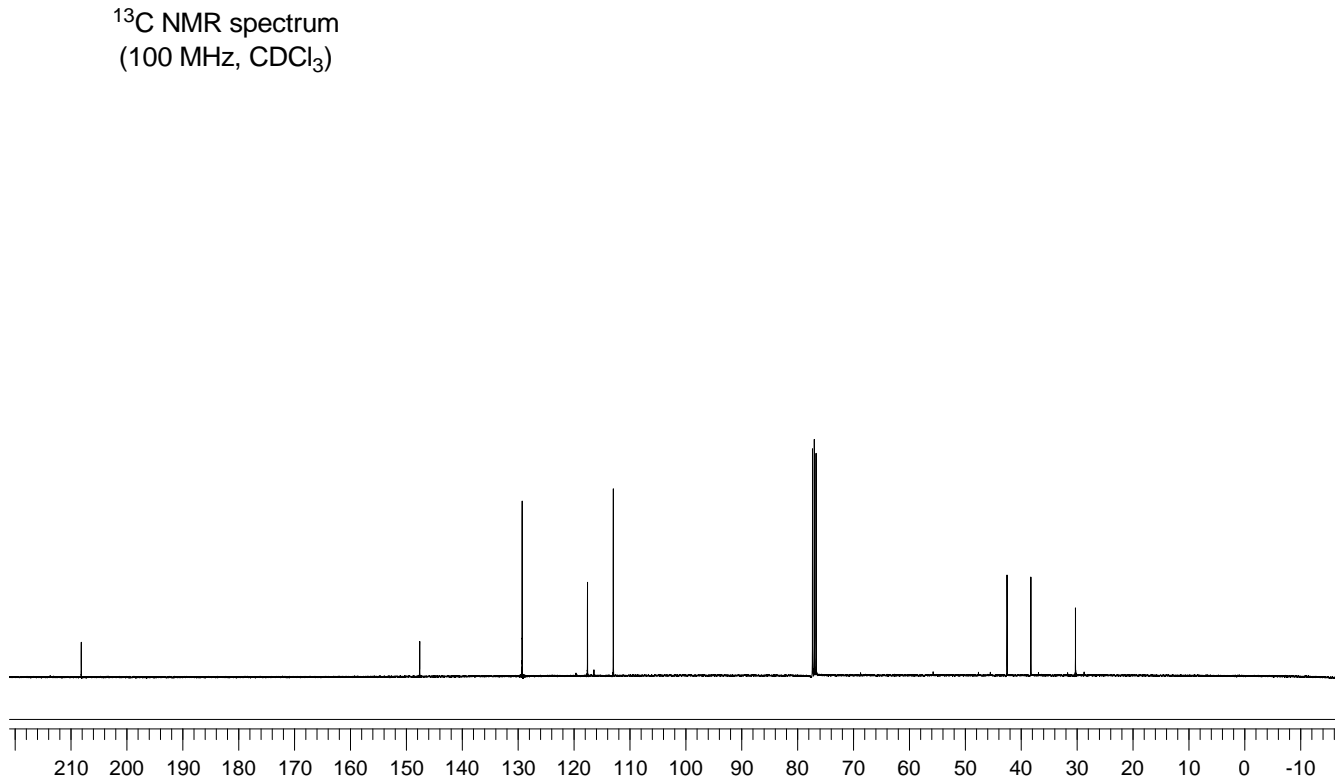


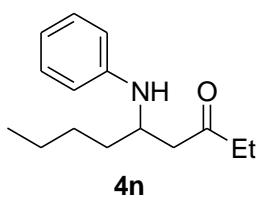
4m

^1H NMR spectrum
(400 MHz, CDCl_3)

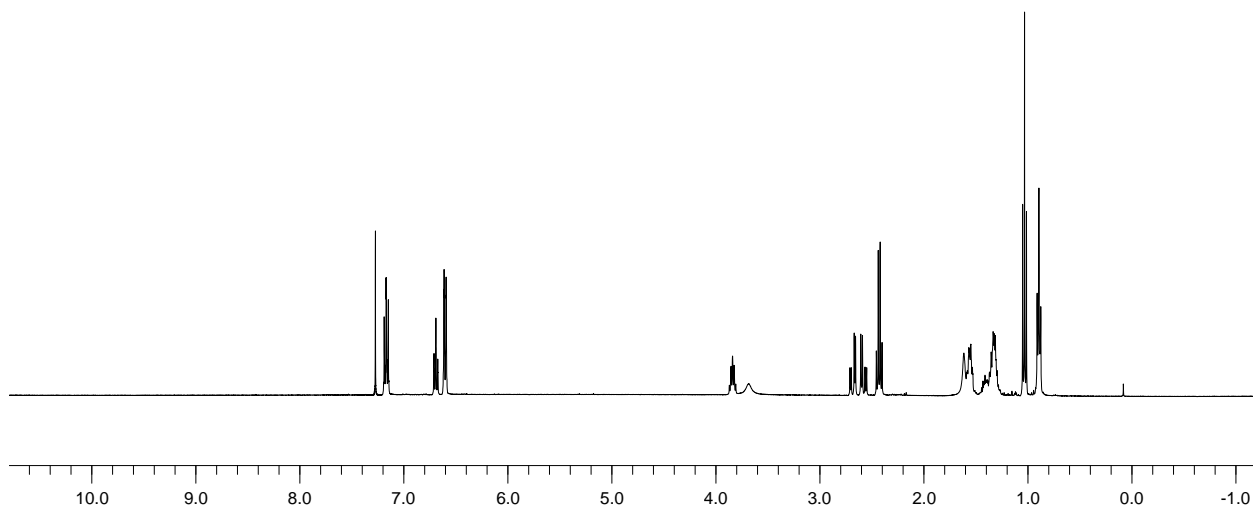


^{13}C NMR spectrum
(100 MHz, CDCl_3)

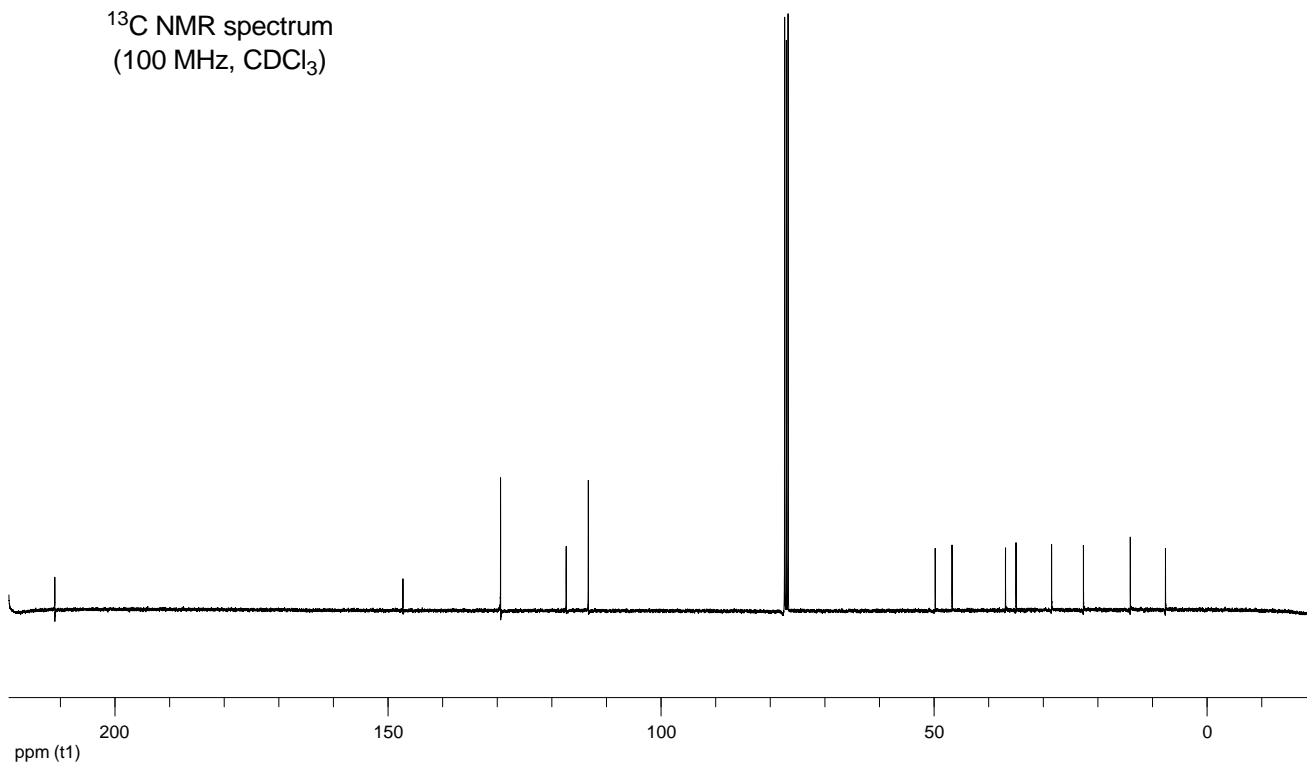


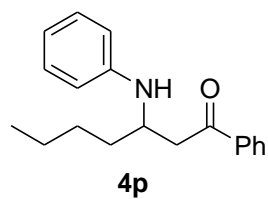


¹H NMR spectrum
(400 MHz, CDCl₃)

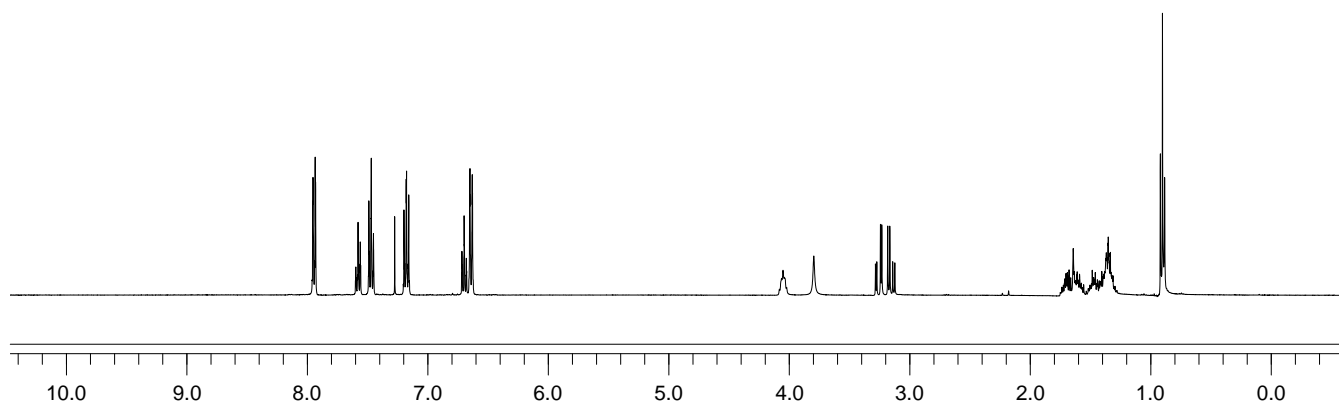


¹³C NMR spectrum
(100 MHz, CDCl₃)

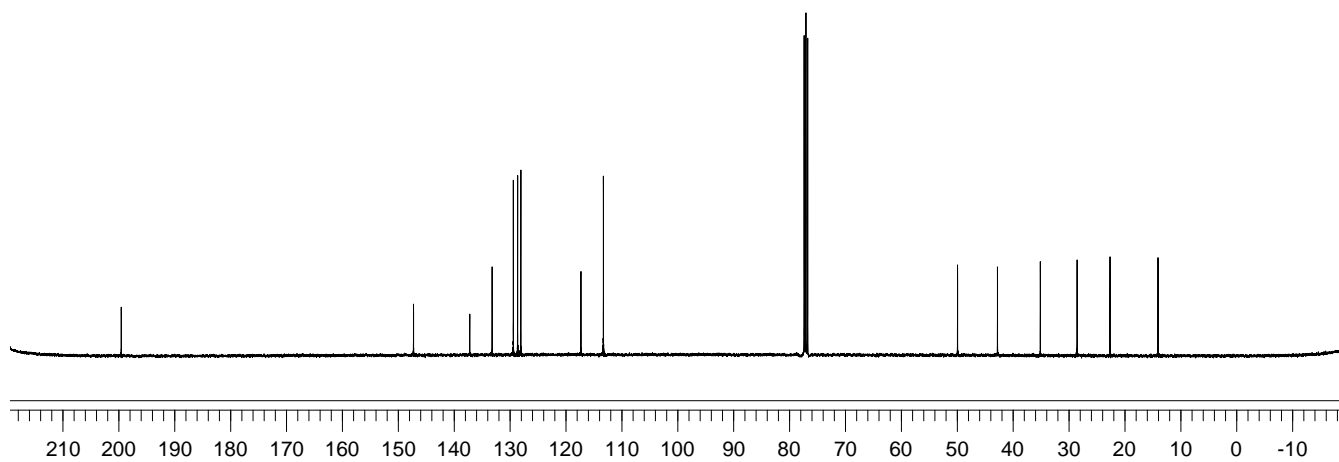


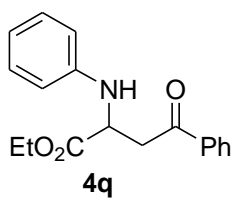


4p
¹H NMR spectrum
(400 MHz, CDCl₃)

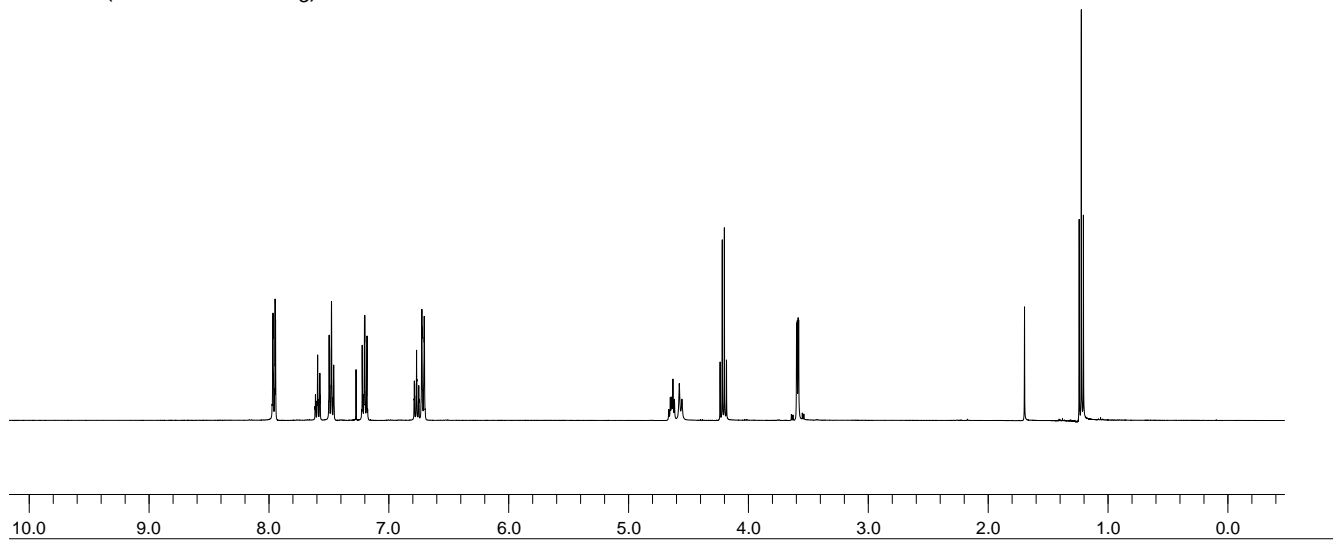


¹³C NMR spectrum
(100 MHz, CDCl₃)

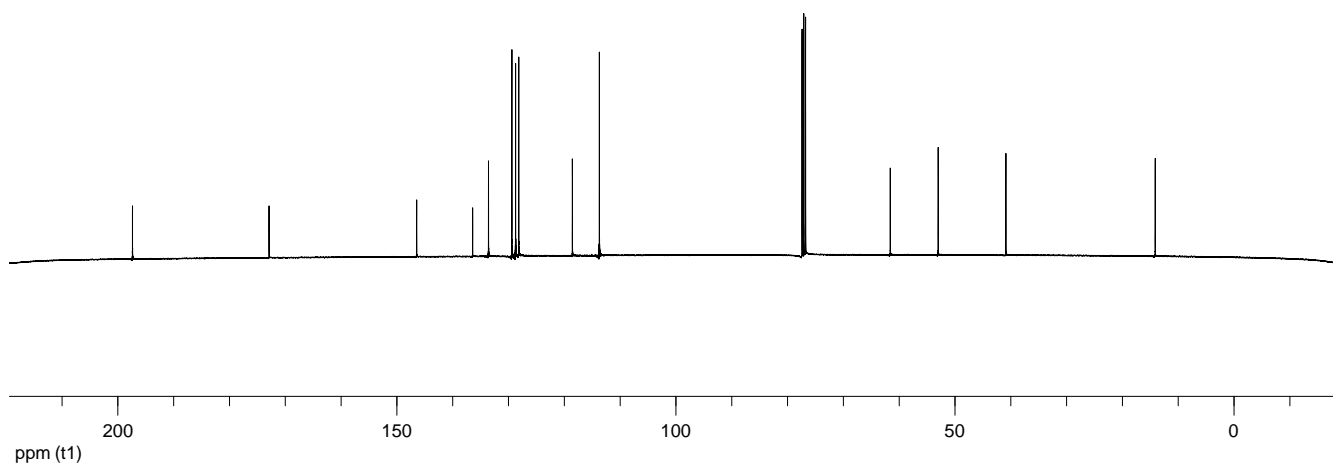


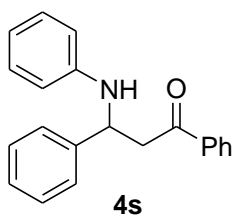


¹H NMR spectrum
(400 MHz, CDCl₃)

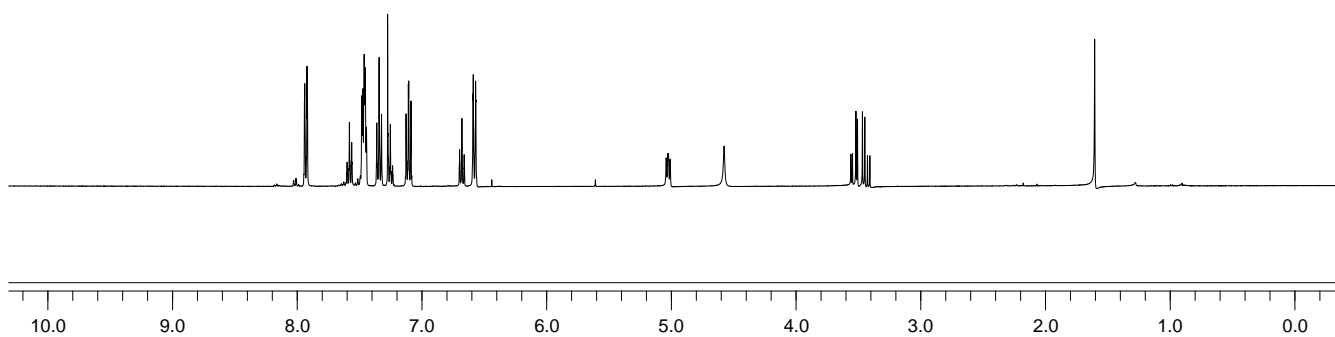


¹³C NMR spectrum
(100 MHz, CDCl₃)

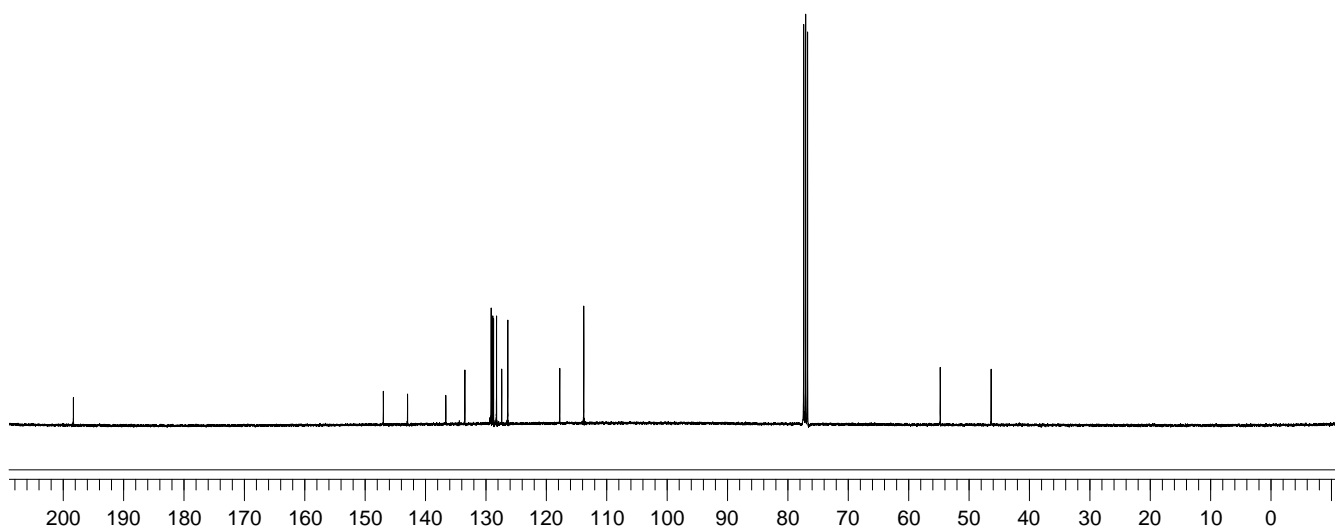


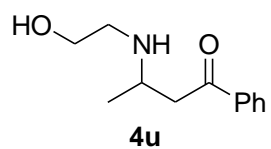


¹H NMR spectrum
(400 MHz, CDCl₃)

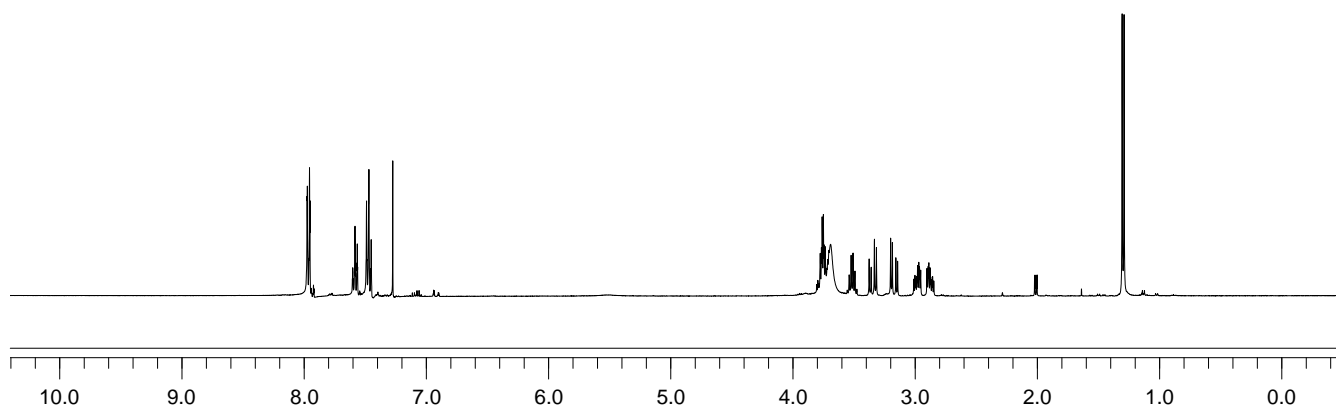


¹³C NMR spectrum
(100 MHz, CDCl₃)





¹H NMR spectrum
(400 MHz, CDCl₃)



¹³C NMR spectrum
(100 MHz, CDCl₃)

