

Synthesis of 1-deoxypyrrrolidine iminosugars, (-)-lentiginosine, (-)-swainsonine and their 8a-epimers from D-Glycals

*Alafia A. Ansari and Y. D. Vankar**

Department of Chemistry, Indian Institute of Technology Kanpur 208 016, India

Contents List of the Supporting Information:

Contents	Page Number
Spectra of the compounds	2-39

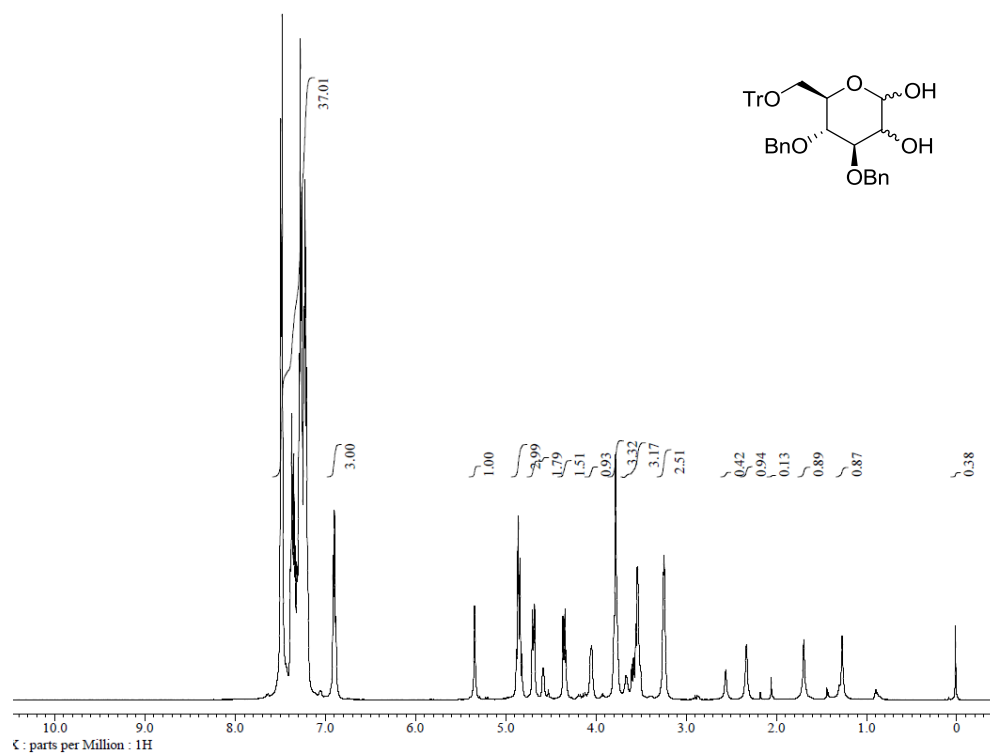


Figure 1.1: ¹H NMR (500 MHz) spectrum of compound **17a**

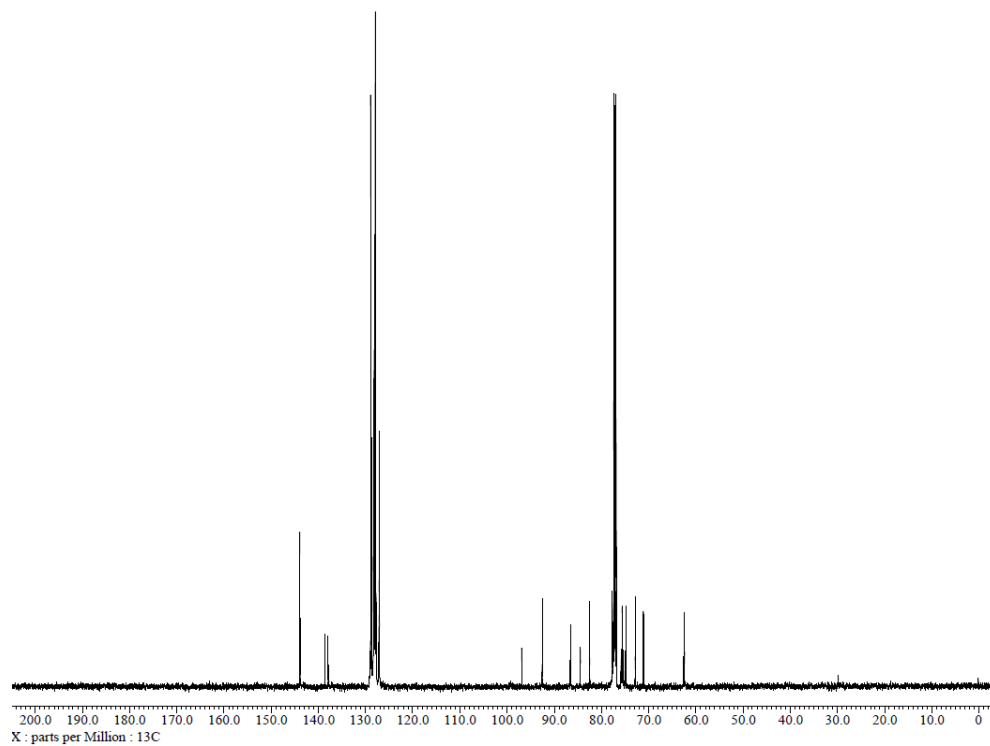


Figure 1.2: ¹³C NMR (125 MHz) spectrum of compound **17a**

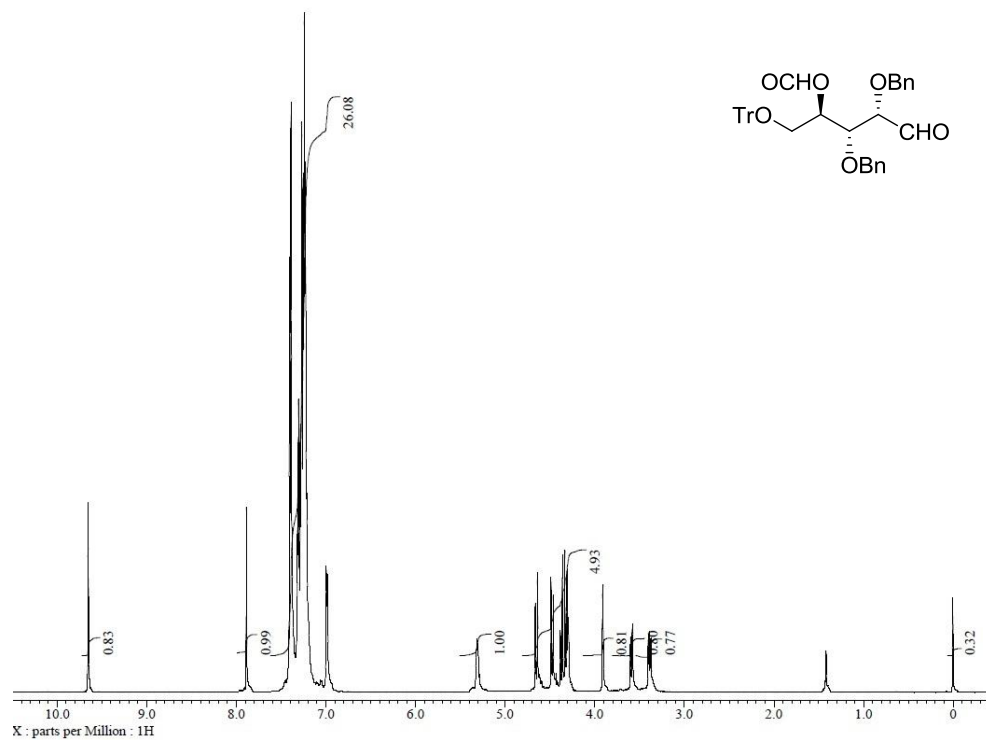


Figure 2.1: ¹H NMR (500 MHz) spectrum of compound 18a

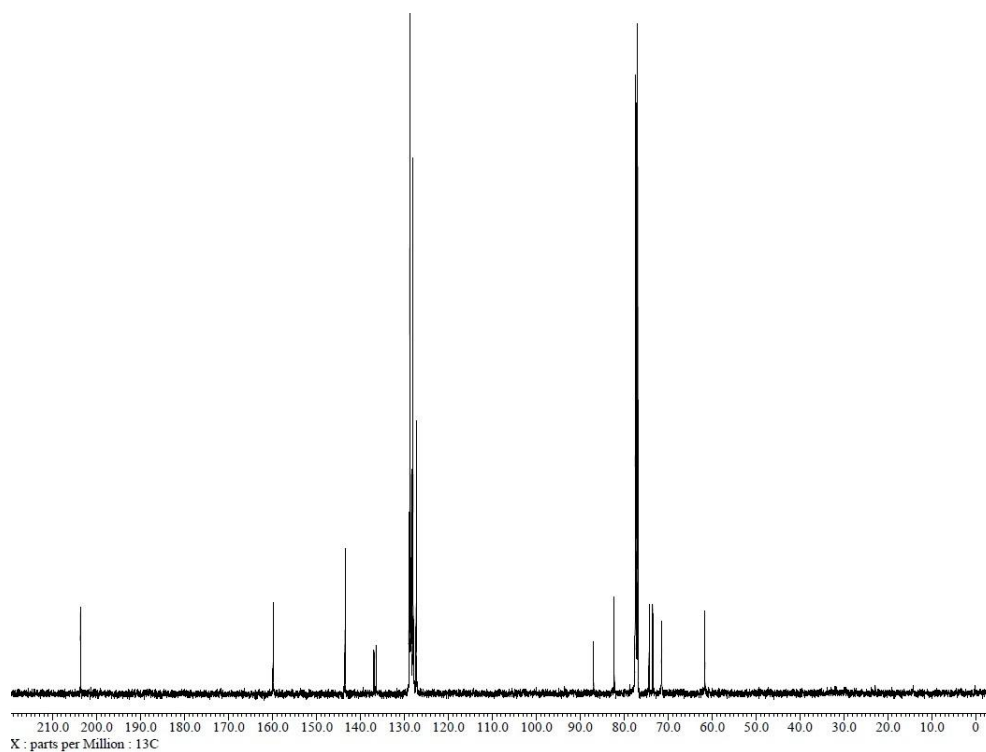


Figure 2.2: ¹³C NMR (125 MHz) spectrum of compound 18a

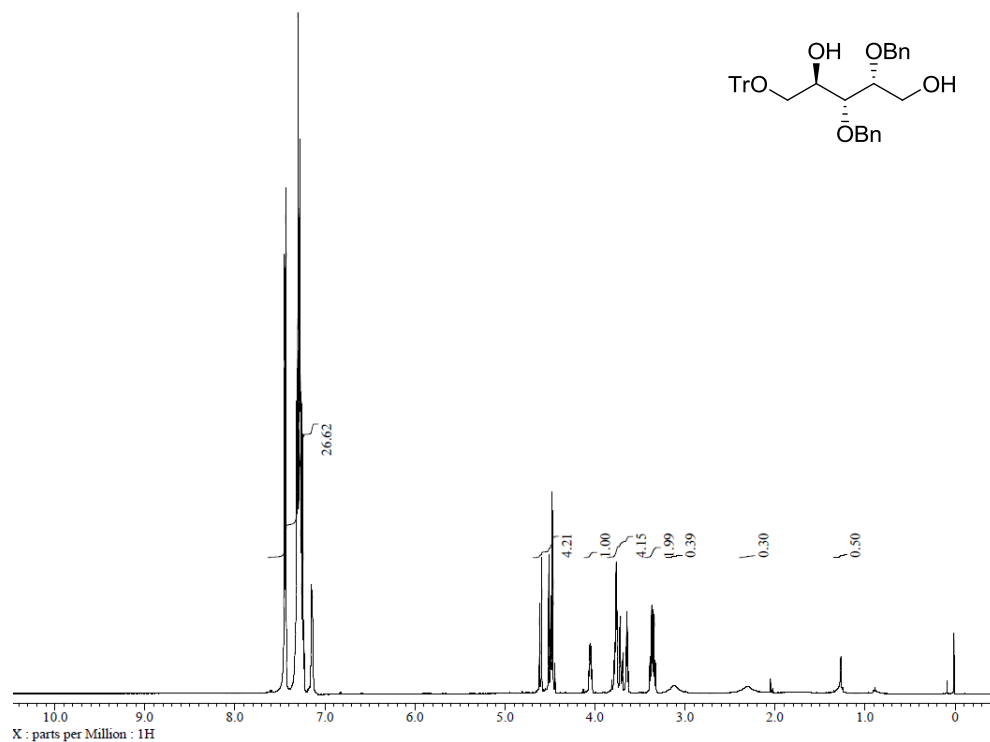


Figure 3.1: ¹H NMR (500 MHz) spectrum of compound **19a**

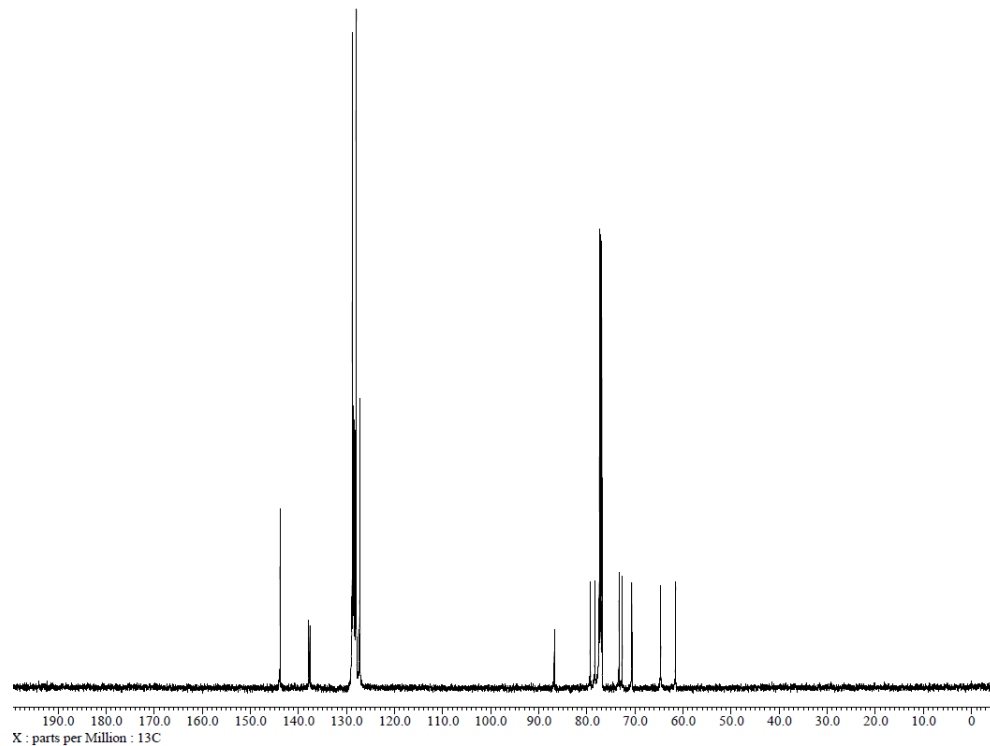


Figure 3.2: ¹³C NMR (125 MHz) spectrum of compound **19a**

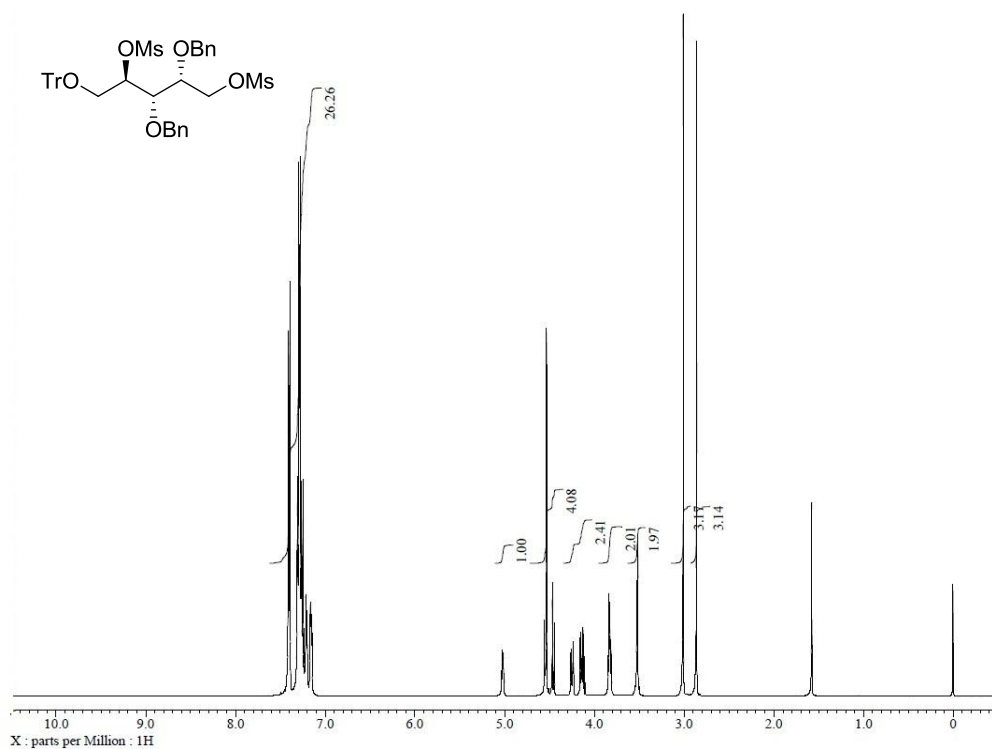


Figure 4.1: ¹H NMR (500 MHz) spectrum of compound 20a

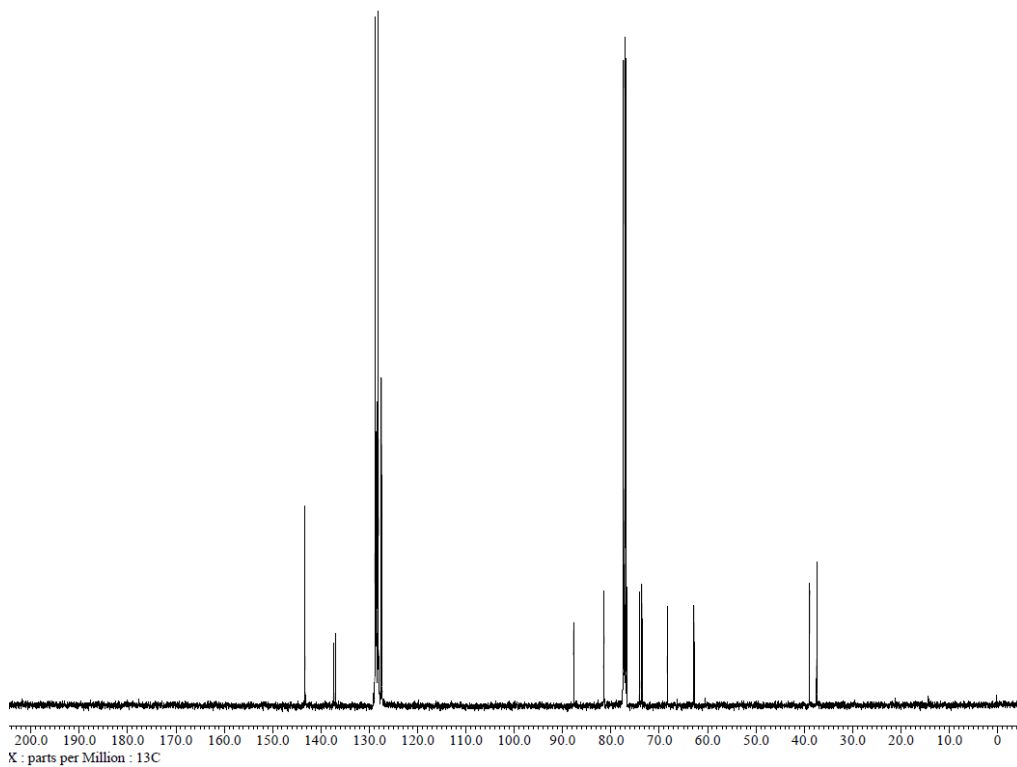


Figure 4.2: ¹³C NMR (125 MHz) spectrum of compound 20a

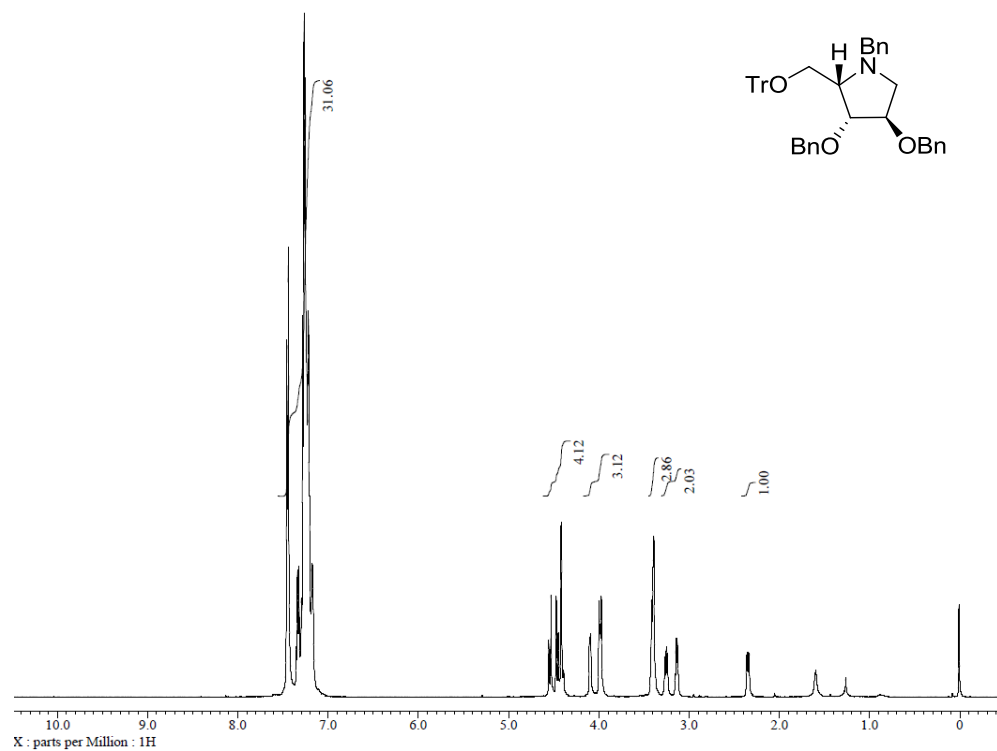


Figure 5.1: ¹H NMR (500 MHz) spectrum of compound 21a

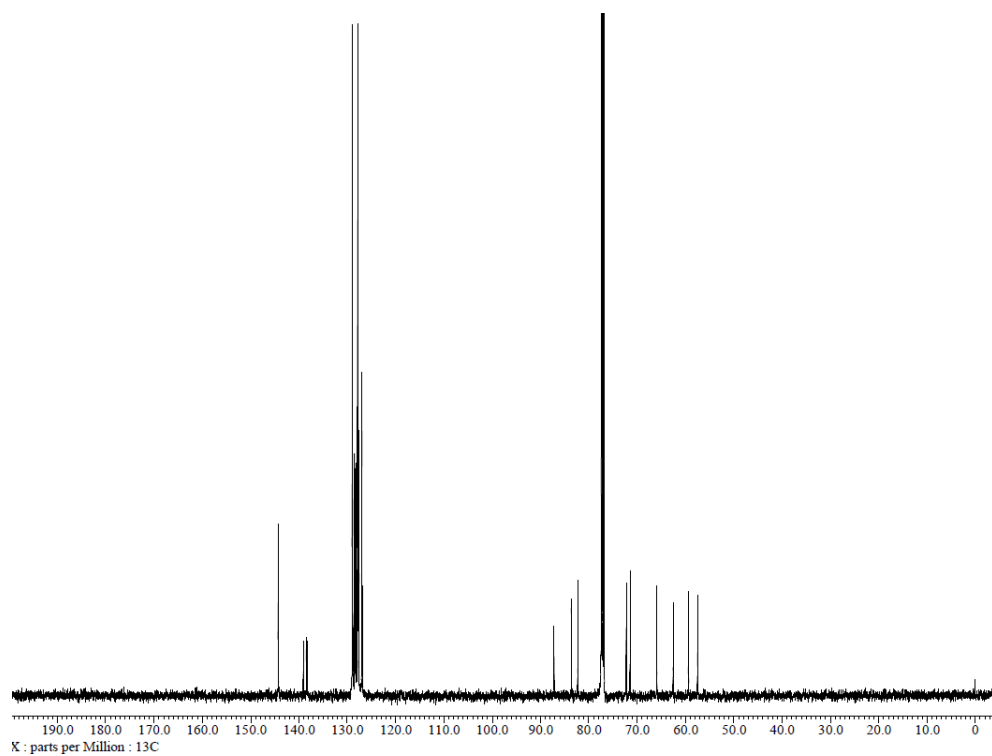


Figure 5.2: ¹³C NMR (125 MHz) spectrum of compound 21a

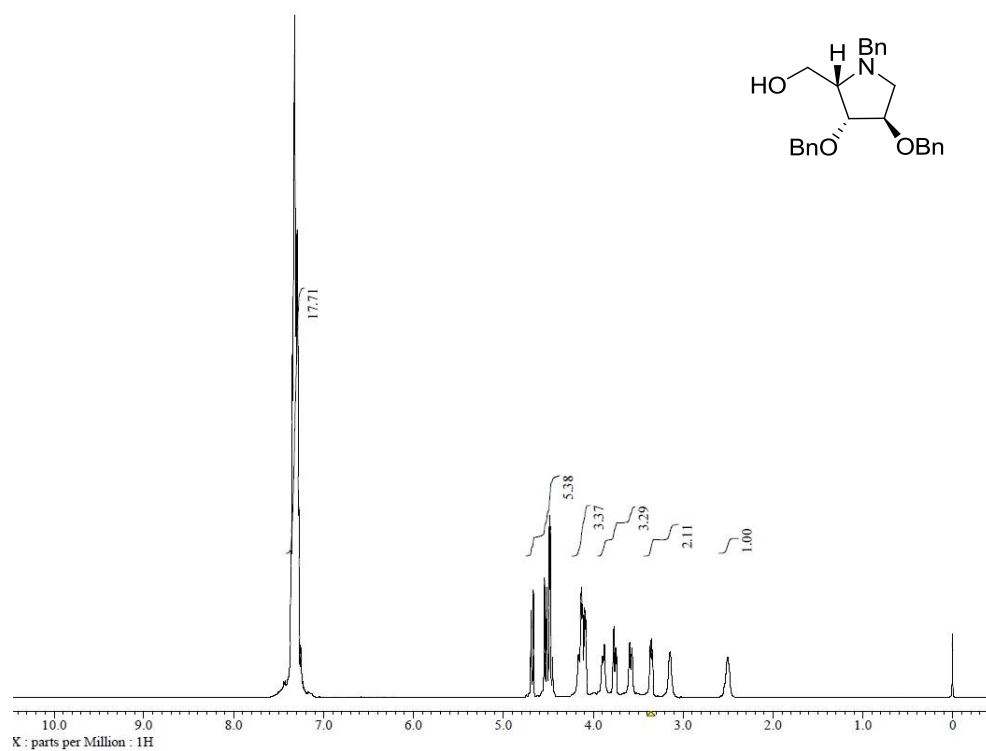


Figure 6.1: ¹H NMR (500 MHz) spectrum of compound 22a

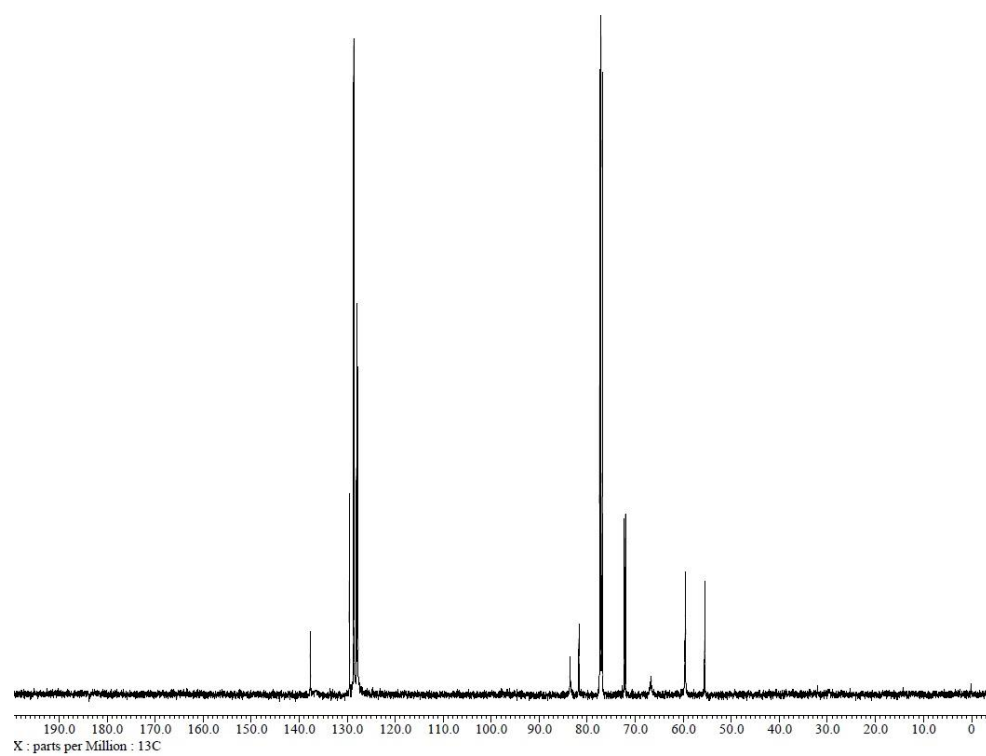


Figure 6.2: ¹³C NMR (125 MHz) spectrum of compound 22a

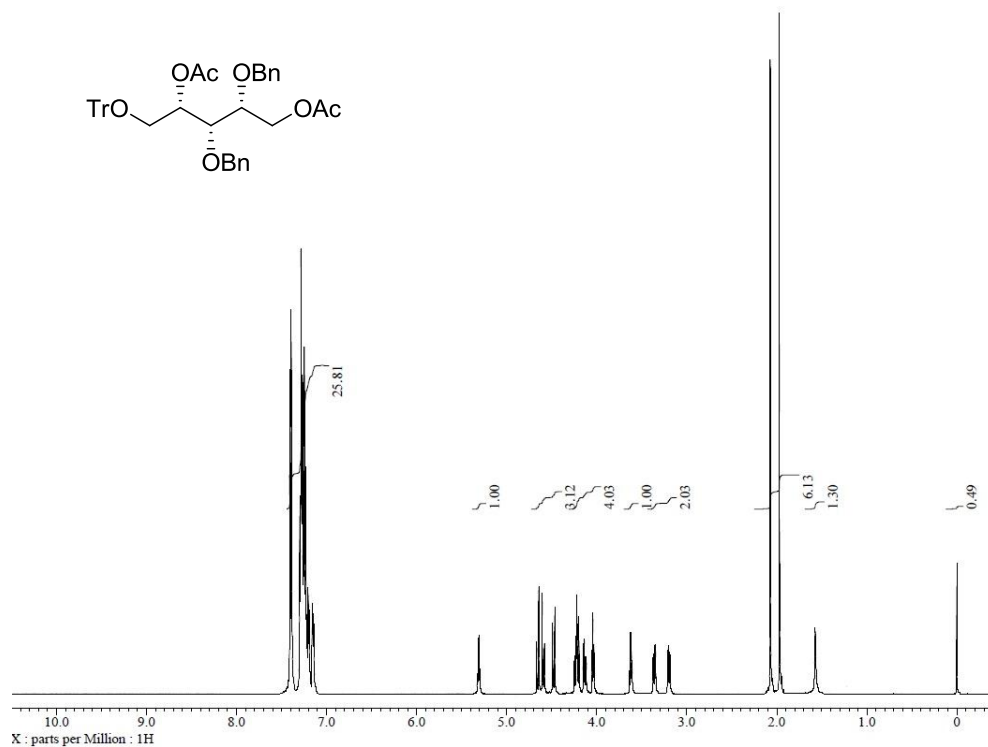


Figure 7.1: ¹H NMR (500 MHz) spectrum of compound 24a

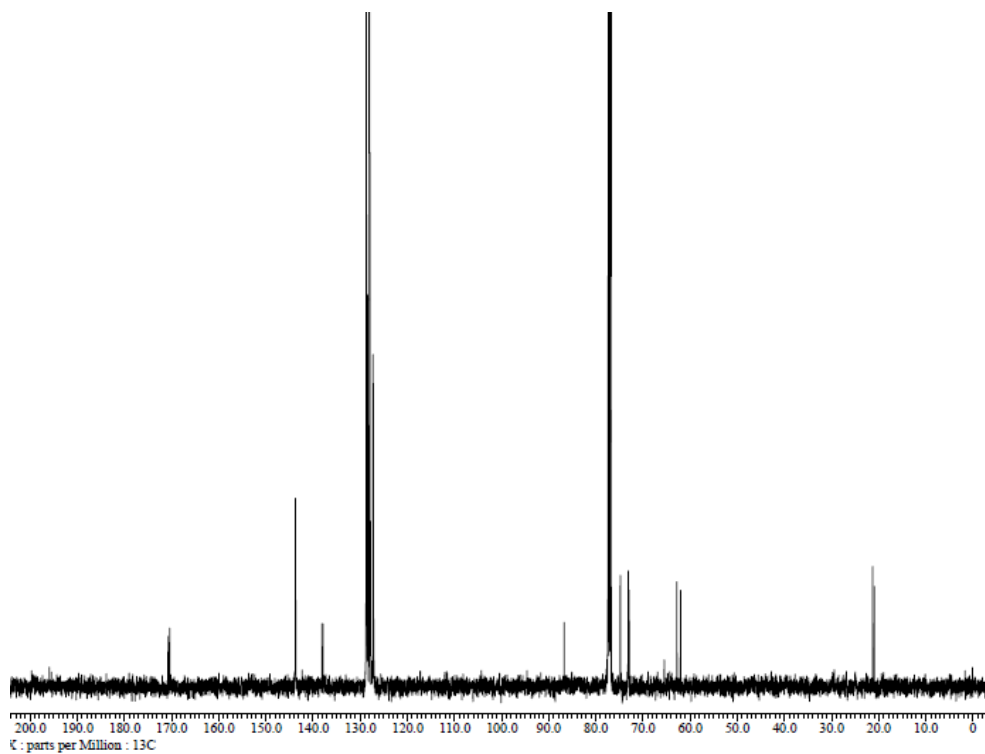


Figure 7.2: ¹³C NMR (125 MHz) spectrum of compound 24a

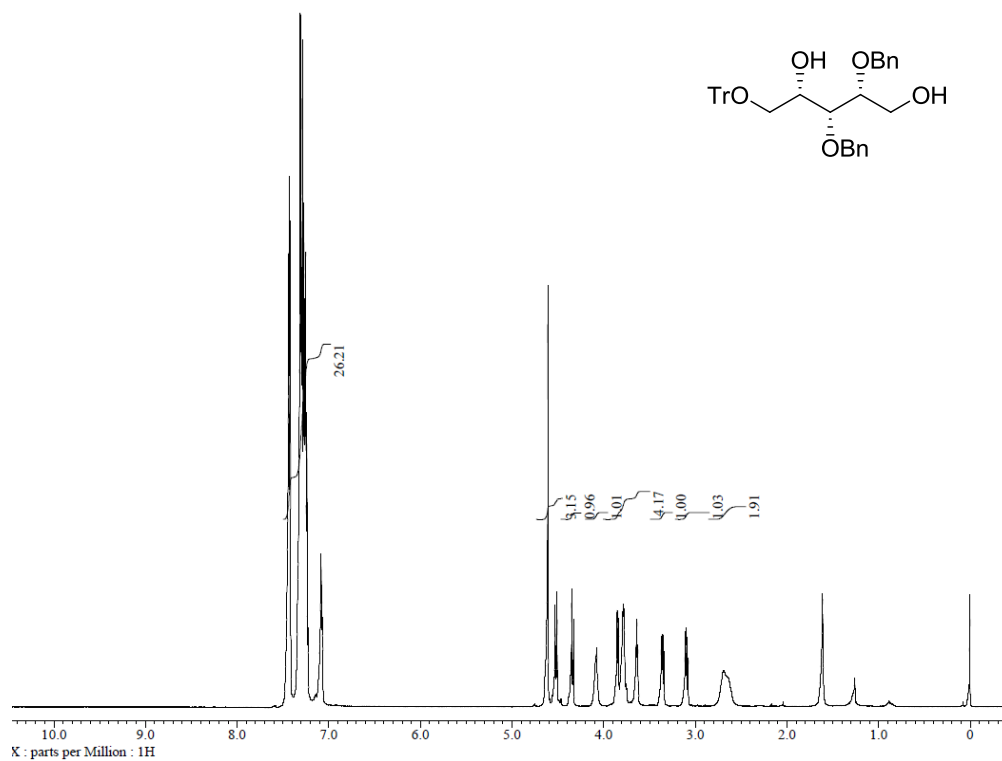


Figure 8.1: ¹H NMR (500 MHz) spectrum of compound 25a

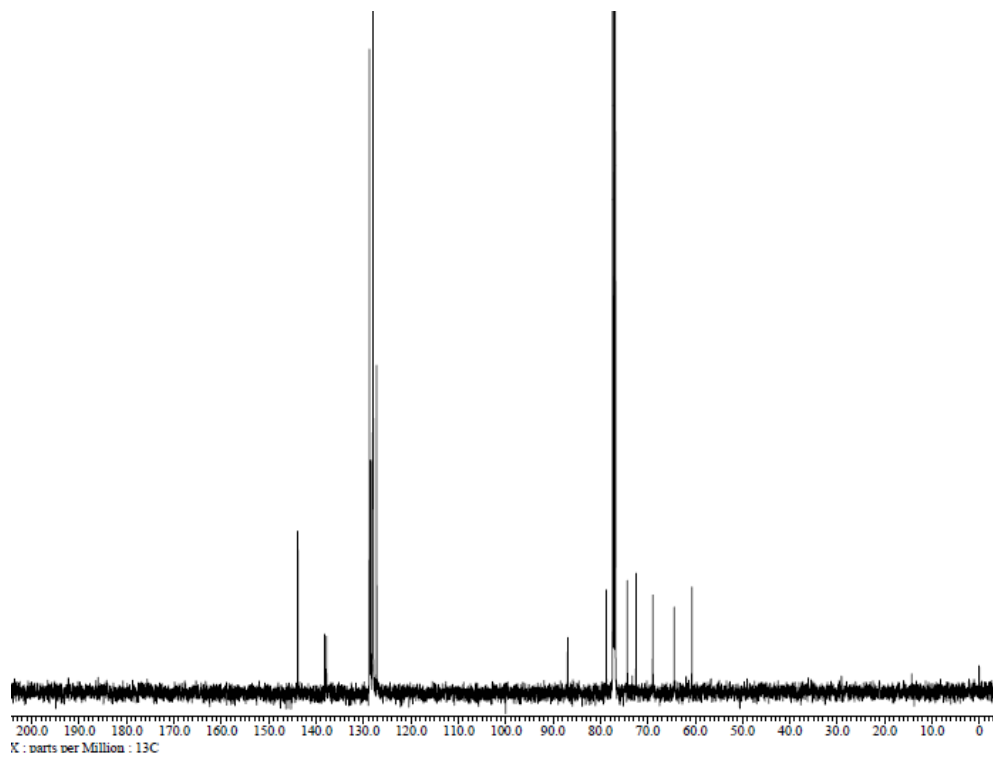


Figure 8.2: ¹³C NMR (125 MHz) spectrum of compound 25a

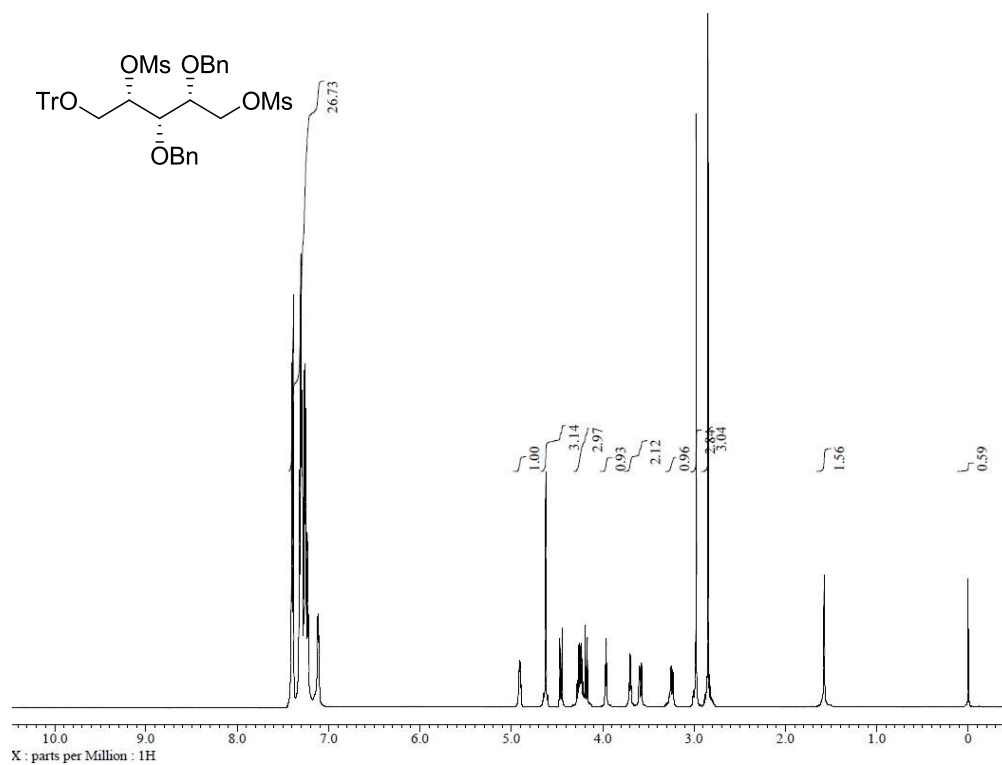


Figure 9.1: ¹H NMR (500 MHz) spectrum of compound 26a

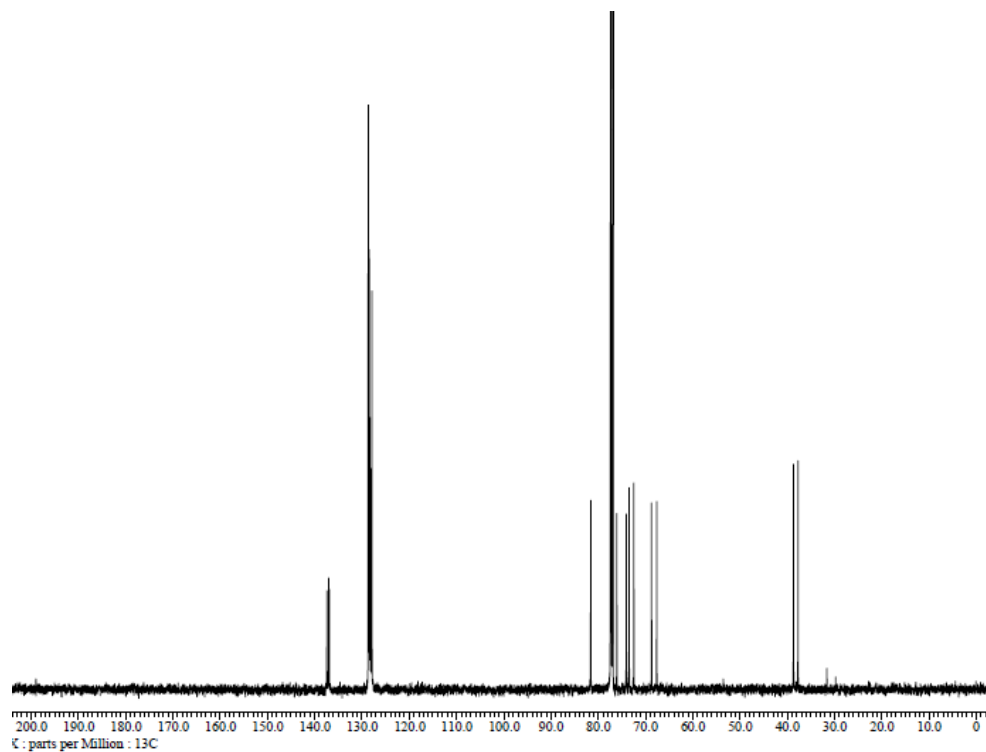


Figure 9.2: ¹³C NMR (125 MHz) spectrum of compound 26a

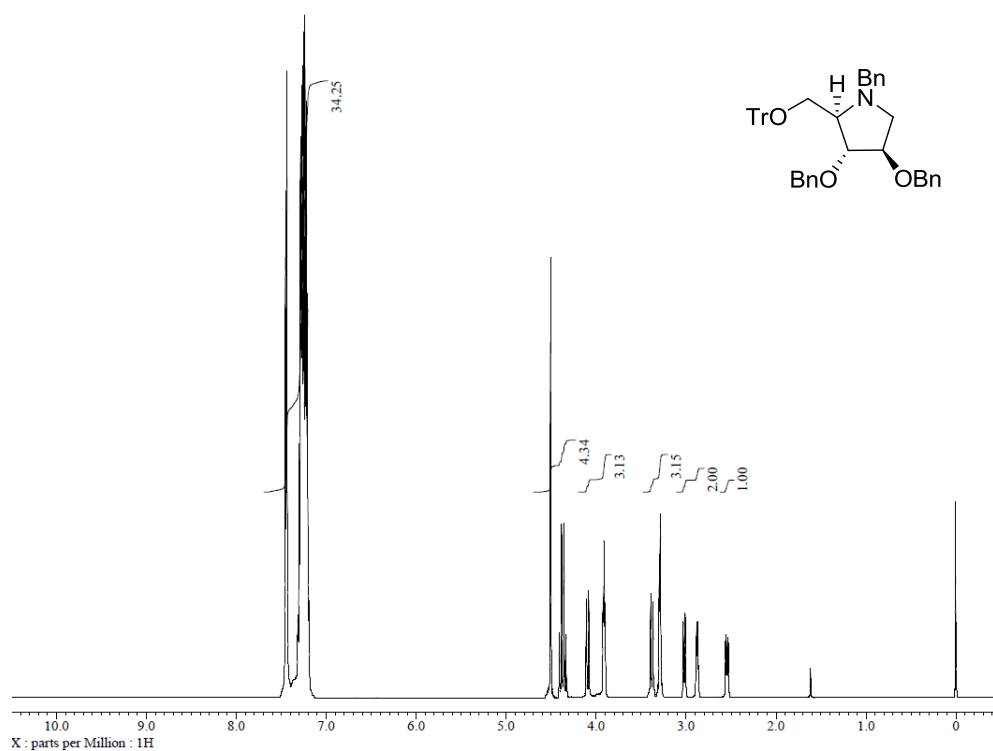


Figure 10.1: ¹H NMR (500 MHz) spectrum of compound **27a**

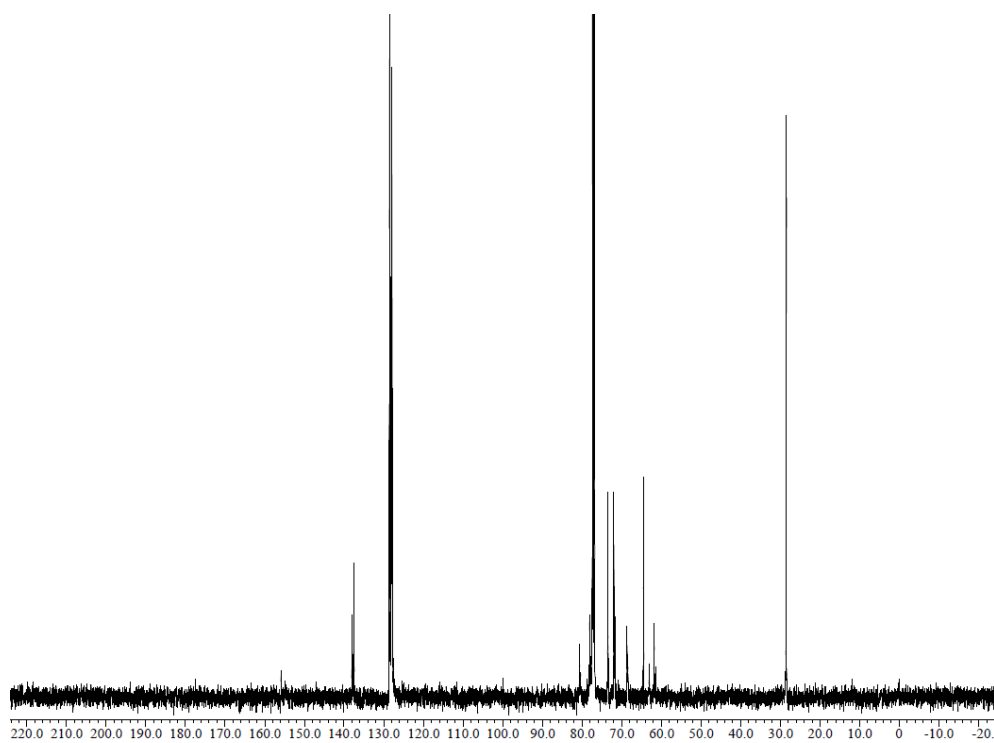


Figure 10.2: ¹³C NMR (125 MHz) spectrum of compound **27a**

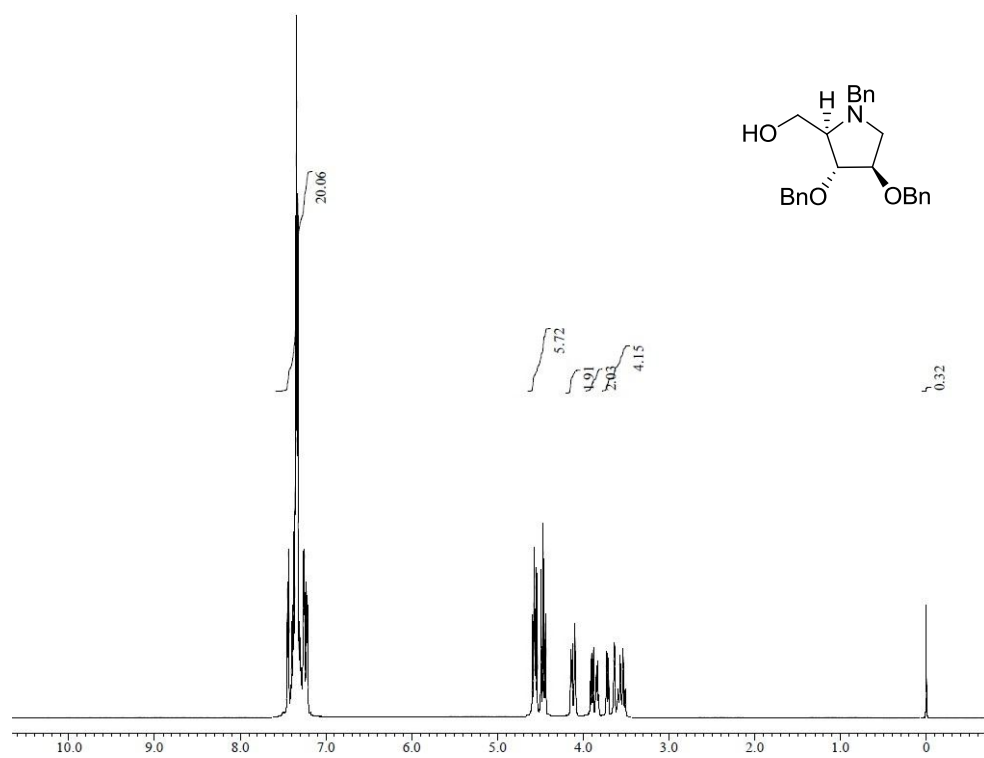


Figure 11.1: ¹H NMR (500 MHz) spectrum of compound **28a**

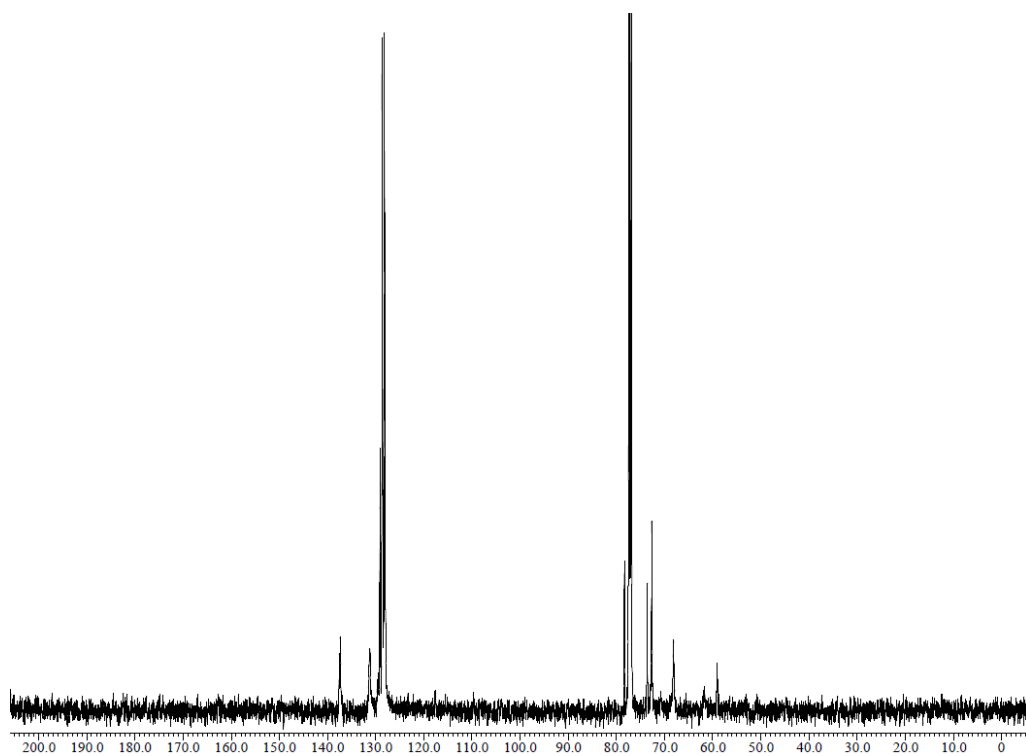


Figure 11.2: ¹³C NMR (125 MHz) spectrum of compound **28a**

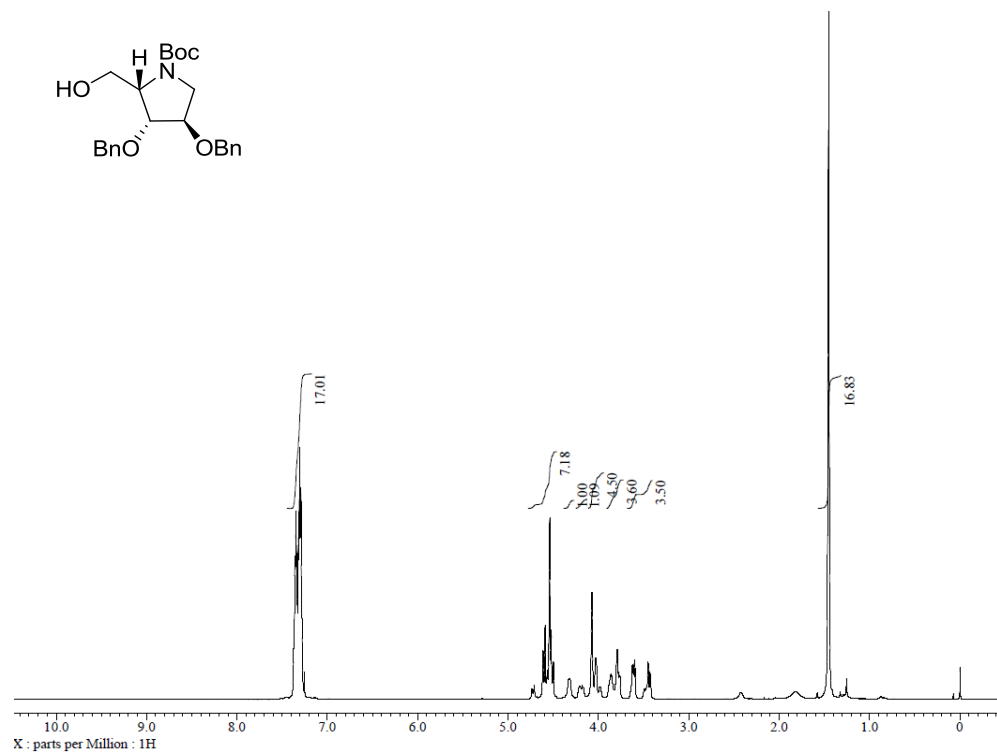


Figure 12.1: ¹H NMR (500 MHz) spectrum of compound **30a**

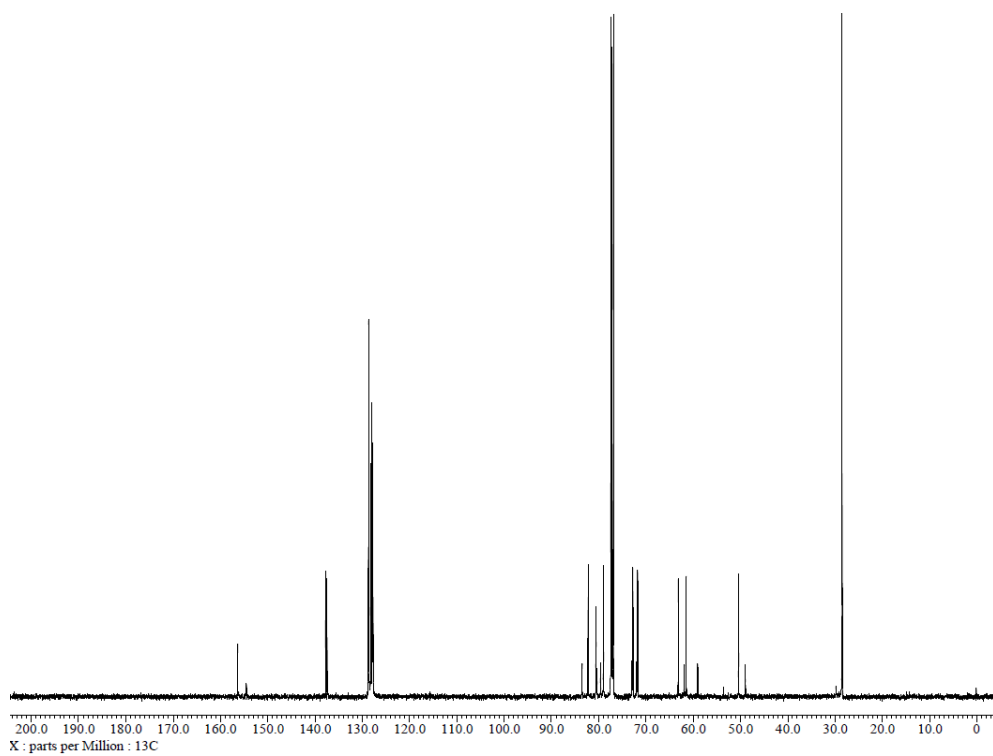


Figure 12.2: ¹³C NMR (125 MHz) spectrum of compound **30a**

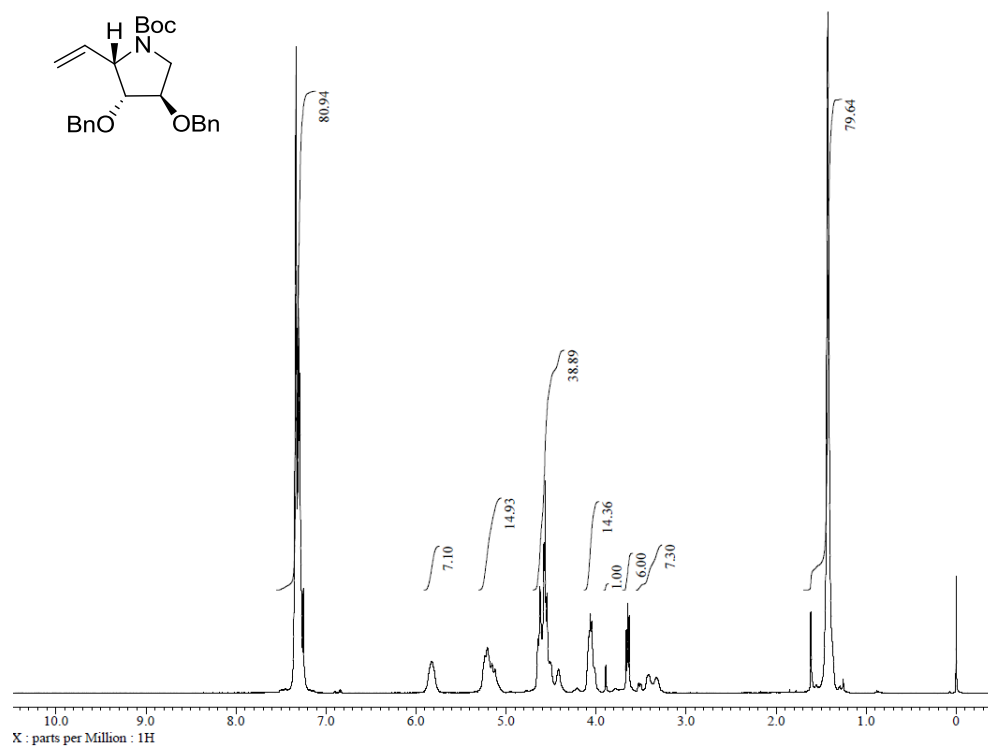


Figure 13.1: ¹H NMR (500 MHz) spectrum of compound 31a

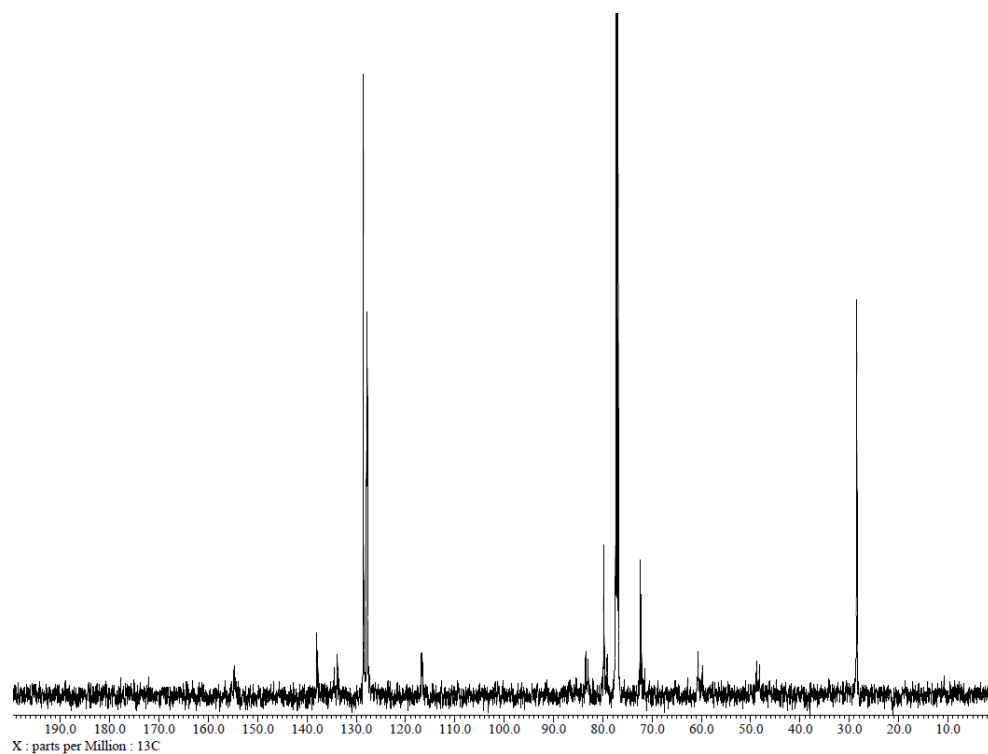


Figure 13.2: ¹³C NMR (125 MHz) spectrum of compound 31a

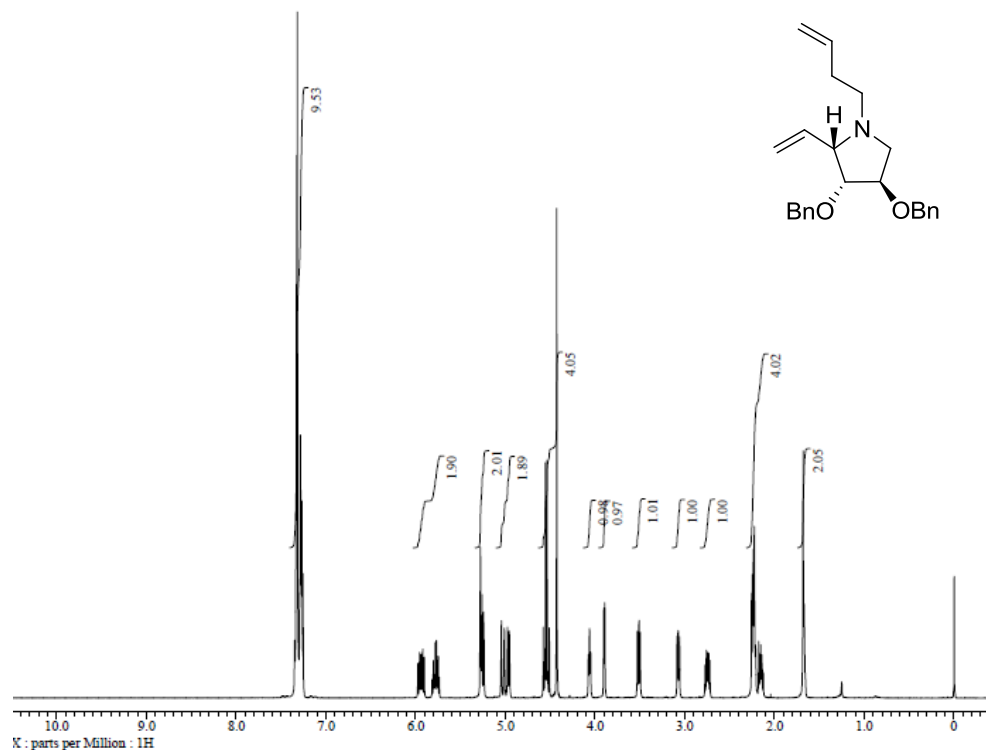


Figure 14.1: ¹H NMR (500 MHz) spectrum of compound **32a**

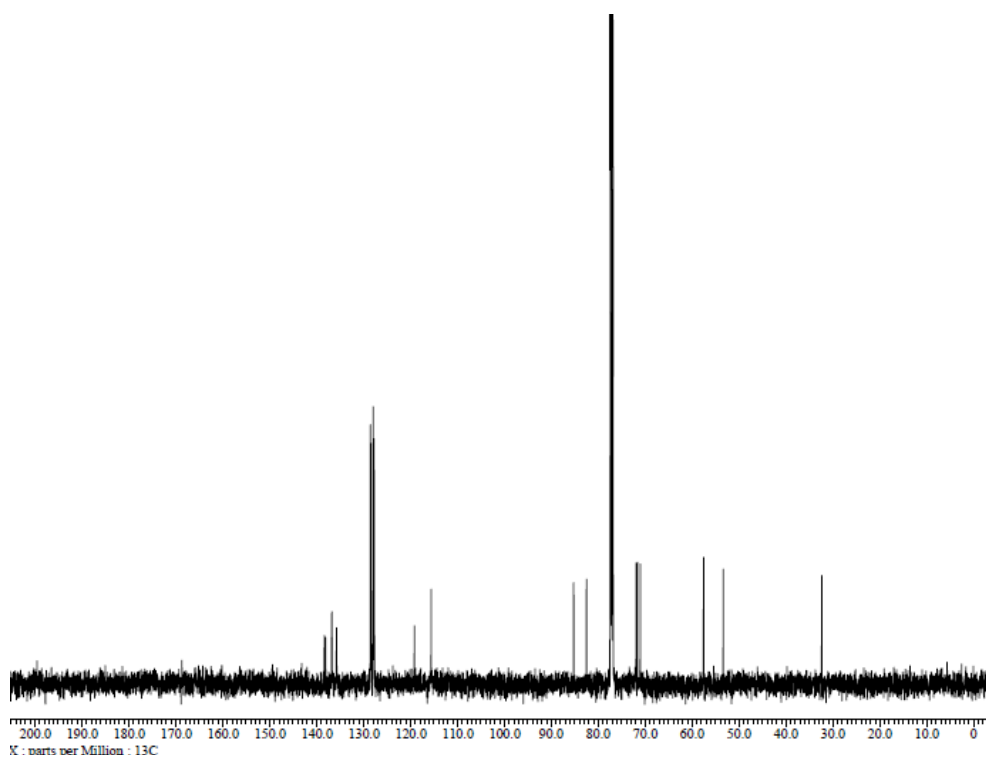


Figure 14.2: ¹³C NMR (125 MHz) spectrum of compound **32a**

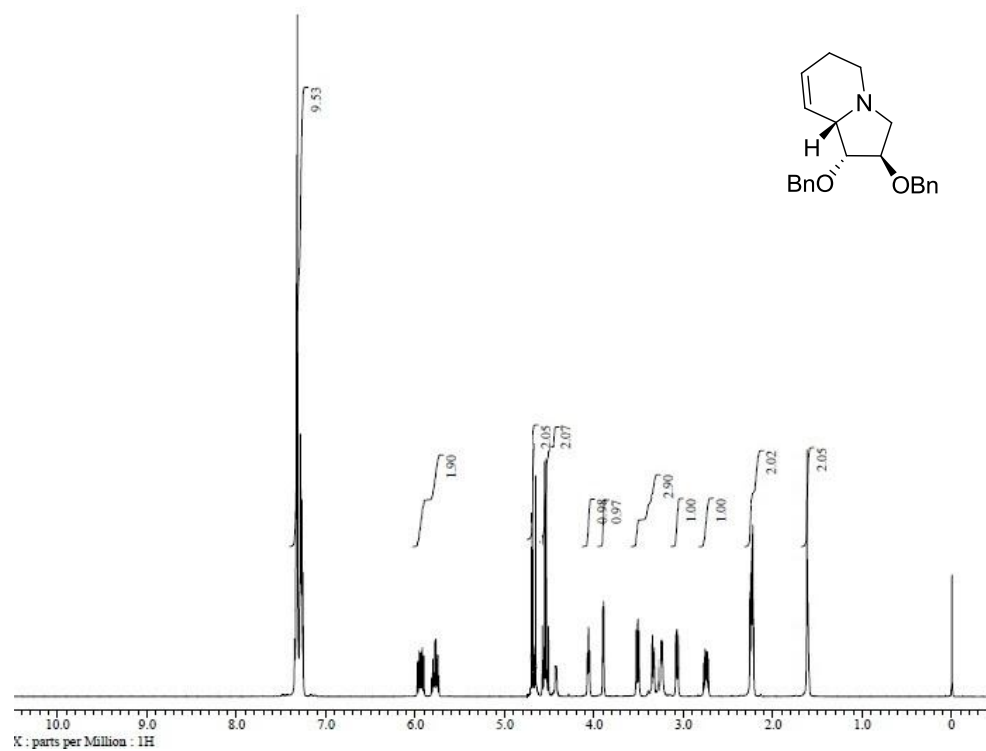


Figure 15.1: ^1H NMR (500 MHz) spectrum of compound **33a**

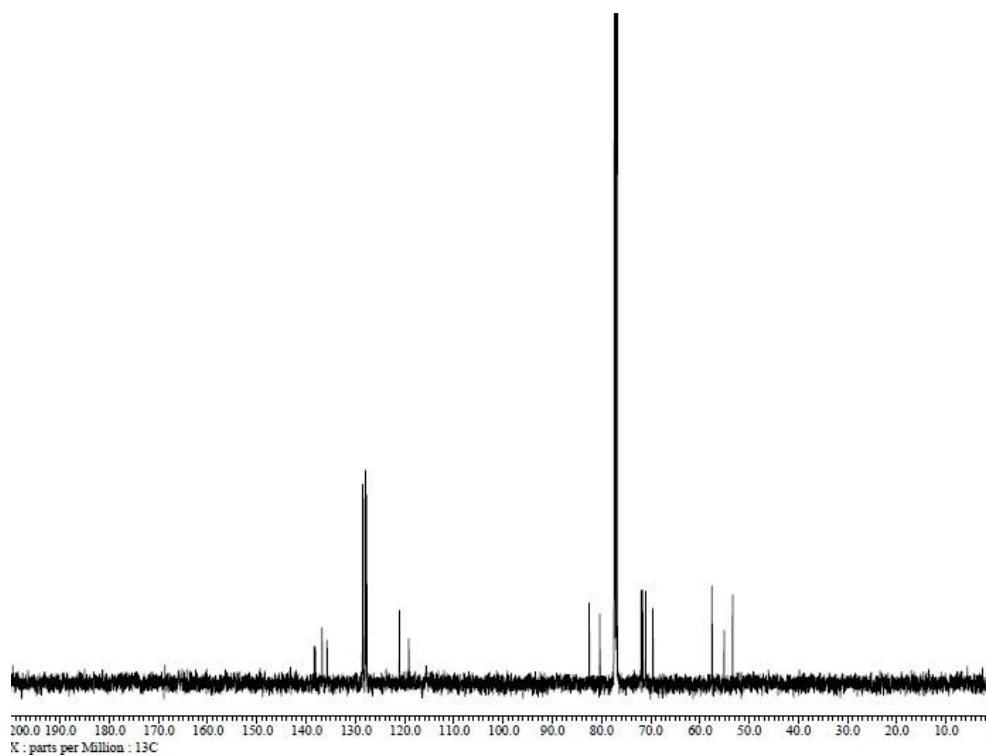


Figure 15.2: ^{13}C NMR (125 MHz) spectrum of compound **33a**

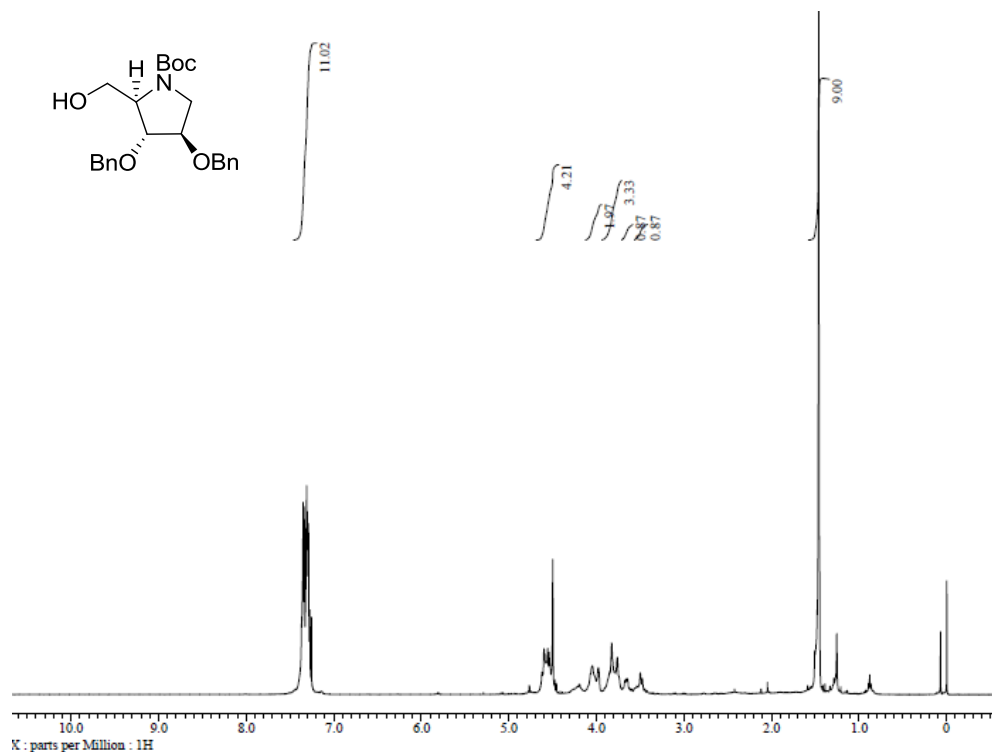


Figure 16.1: ¹H NMR (500 MHz) spectrum of compound **30b**

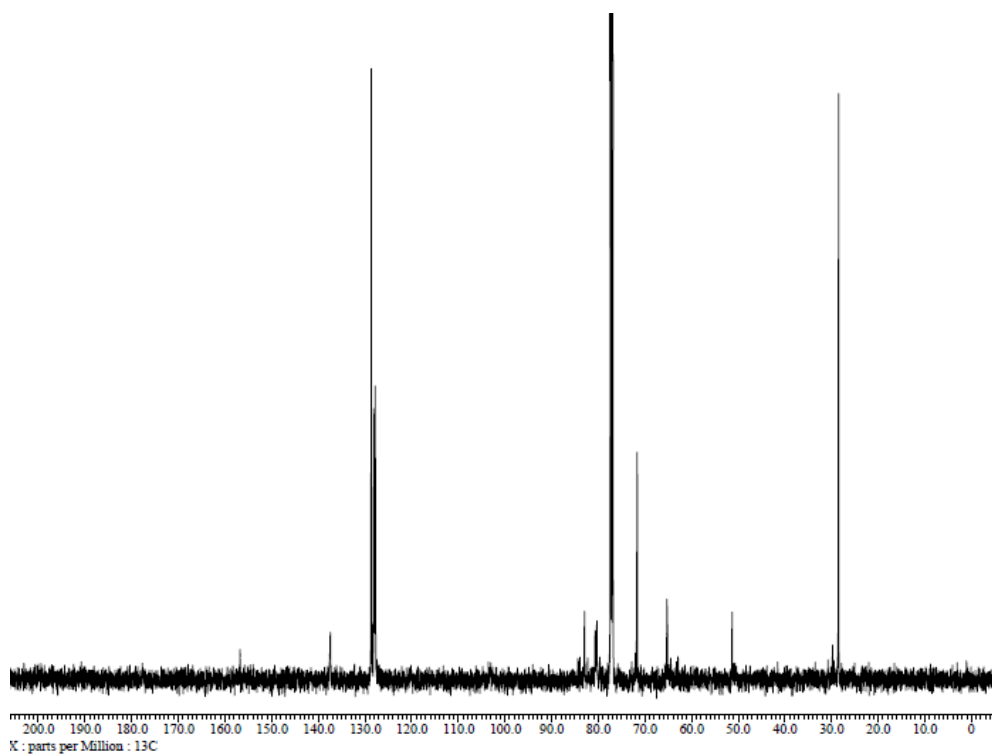


Figure 16.2: ¹³C NMR (125 MHz) spectrum of compound **30b**

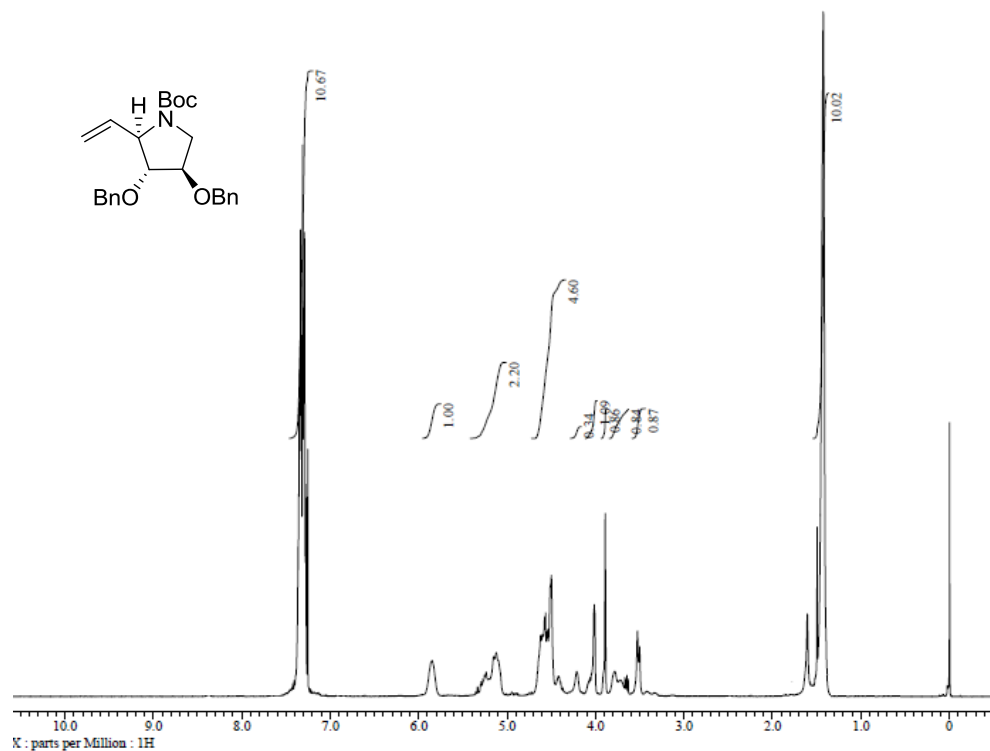


Figure 17.1: ¹H NMR (500 MHz) spectrum of compound **31b**

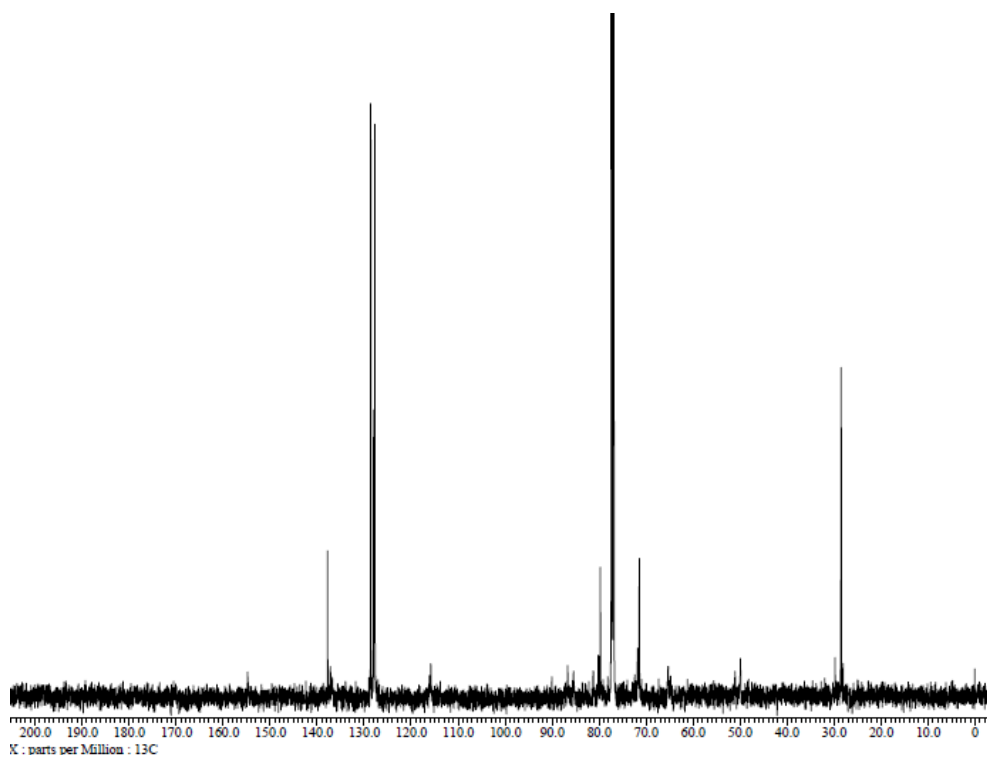


Figure 17.2: ¹³C NMR (125 MHz) spectrum of compound **31b**

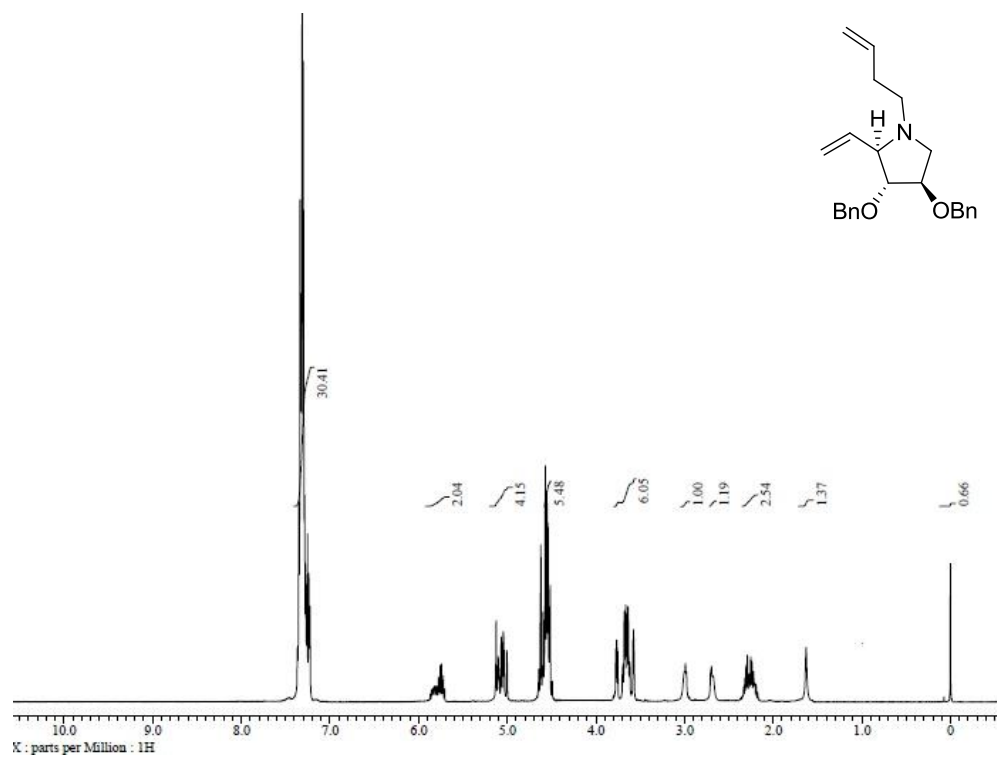


Figure 18.1: ¹H NMR (500 MHz) spectrum of compound **32b**

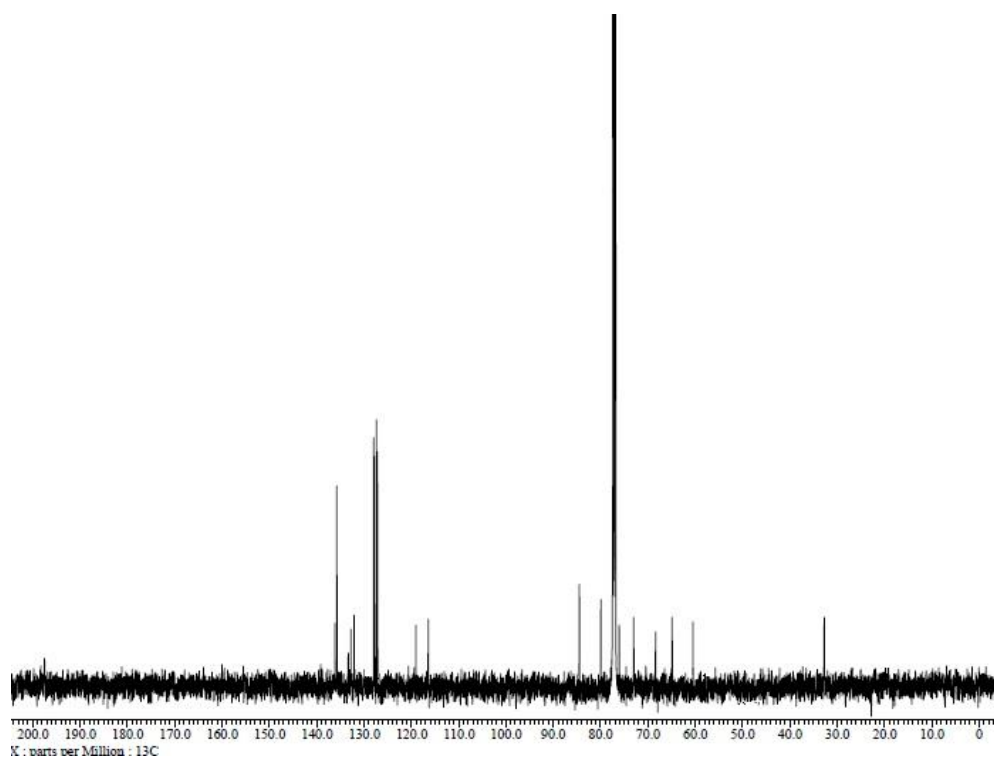


Figure 18.2: ¹³C NMR (125 MHz) spectrum of compound **32b**

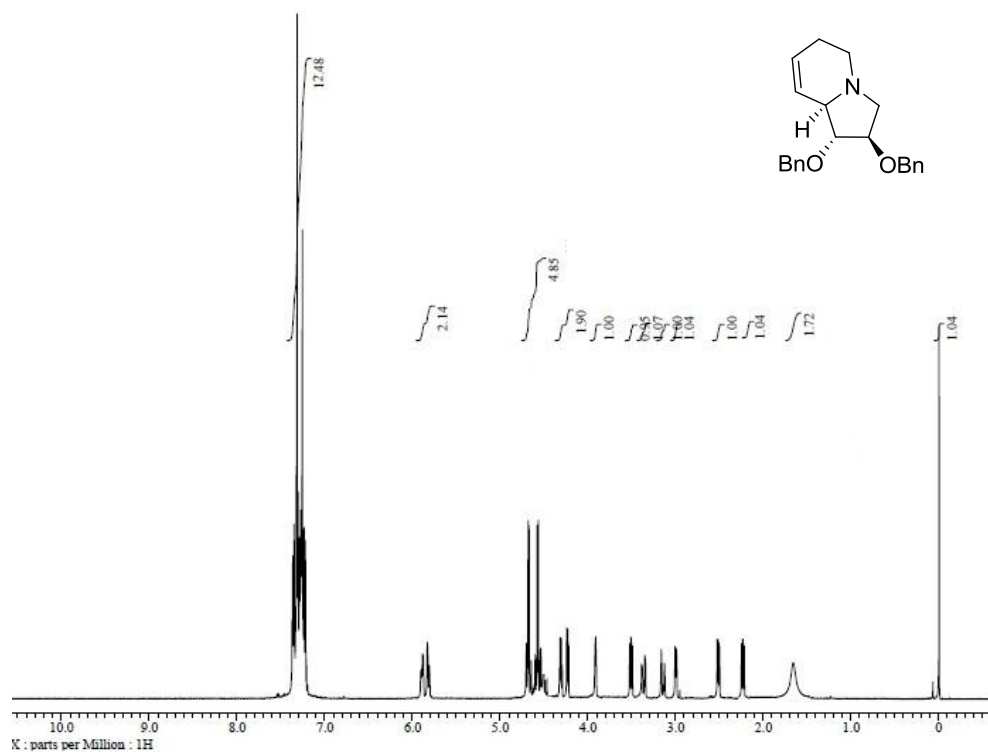


Figure 19.1: ¹H NMR (500 MHz) spectrum of compound **33b**

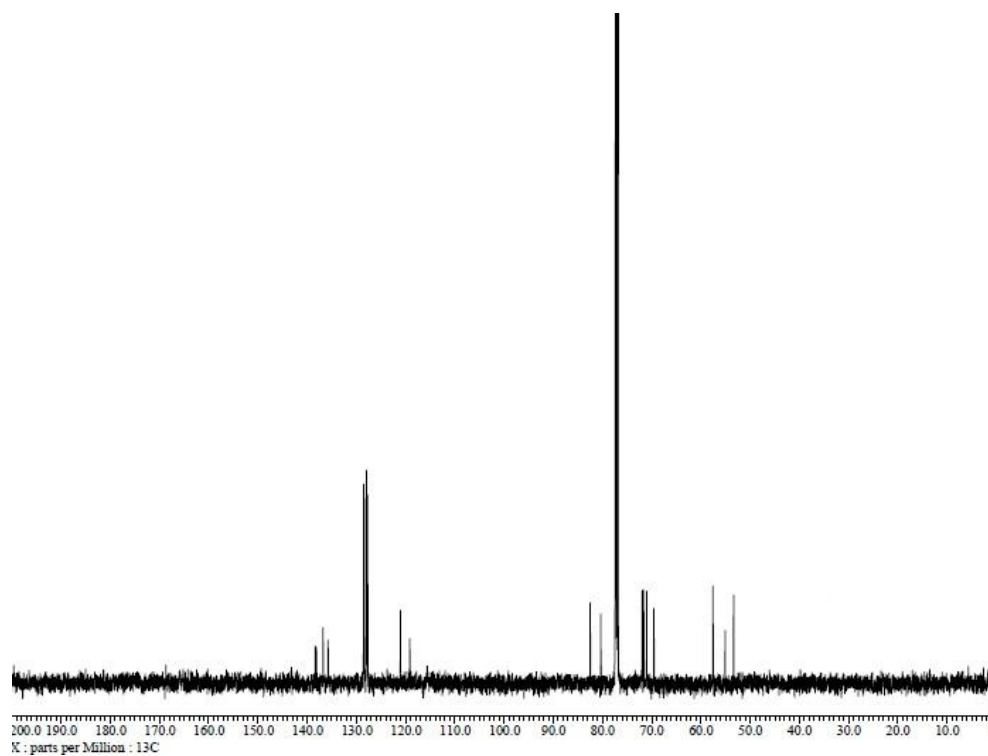


Figure 19.2: ¹³C NMR (125 MHz) spectrum of compound **33b**

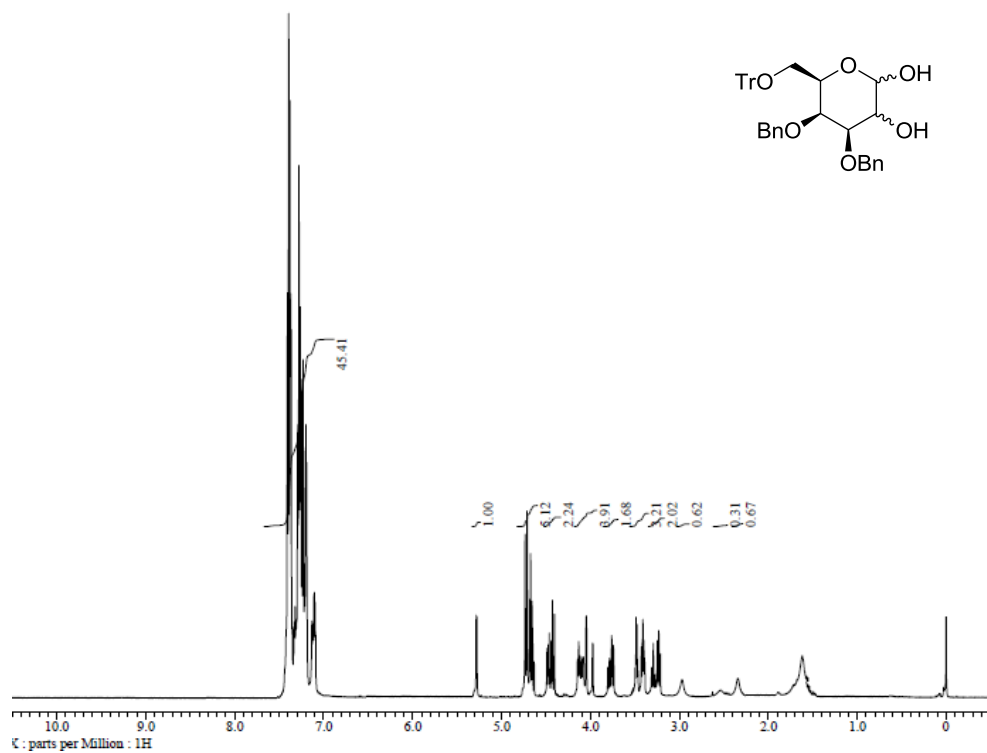


Figure 20.1: ¹H NMR (500 MHz) spectrum of compound **17b**

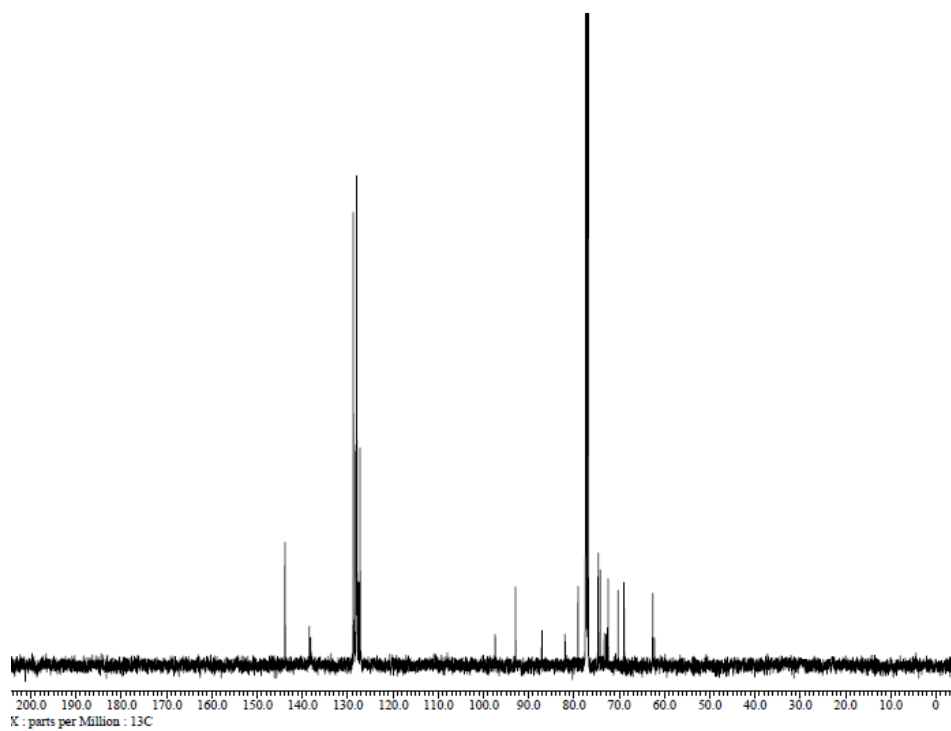


Figure 20.2: ¹³C NMR (125 MHz) spectrum of compound **17b**

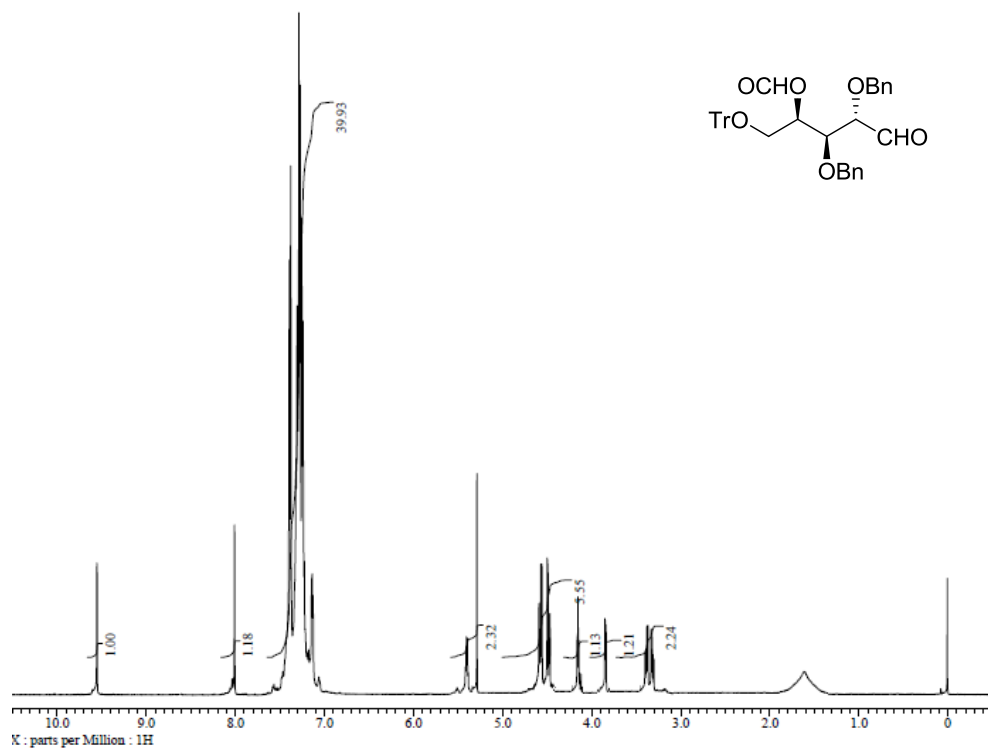


Figure 21.1: ¹H NMR (500 MHz) spectrum of compound **18b**

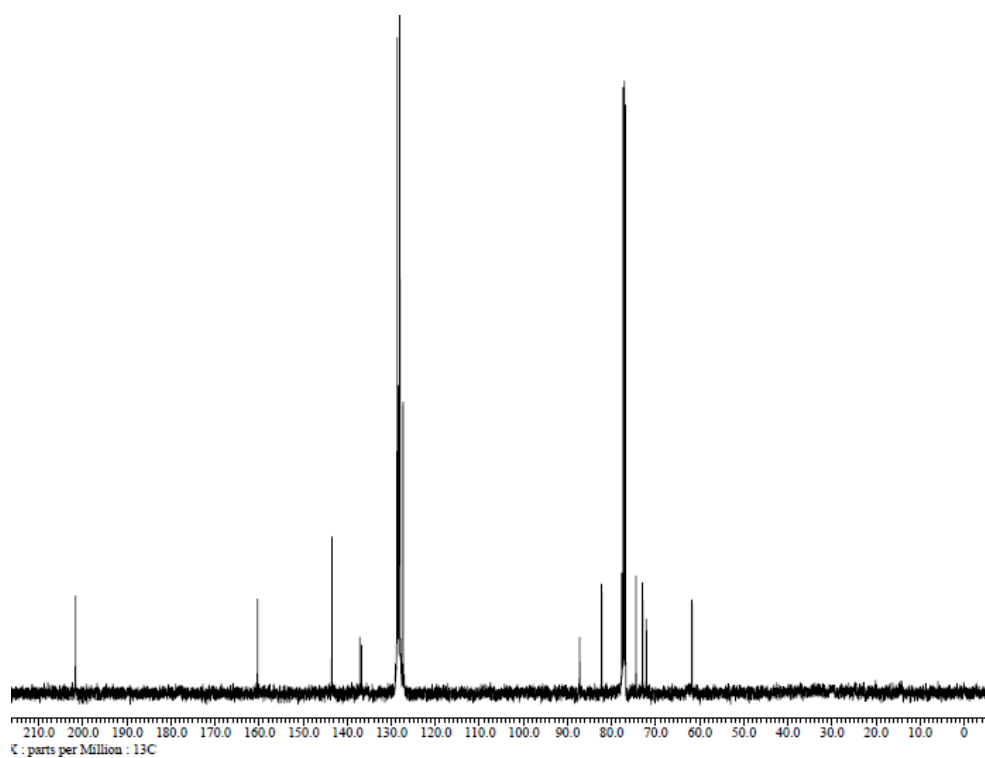


Figure 21.2: ¹³C NMR (125 MHz) spectrum of compound **18b**

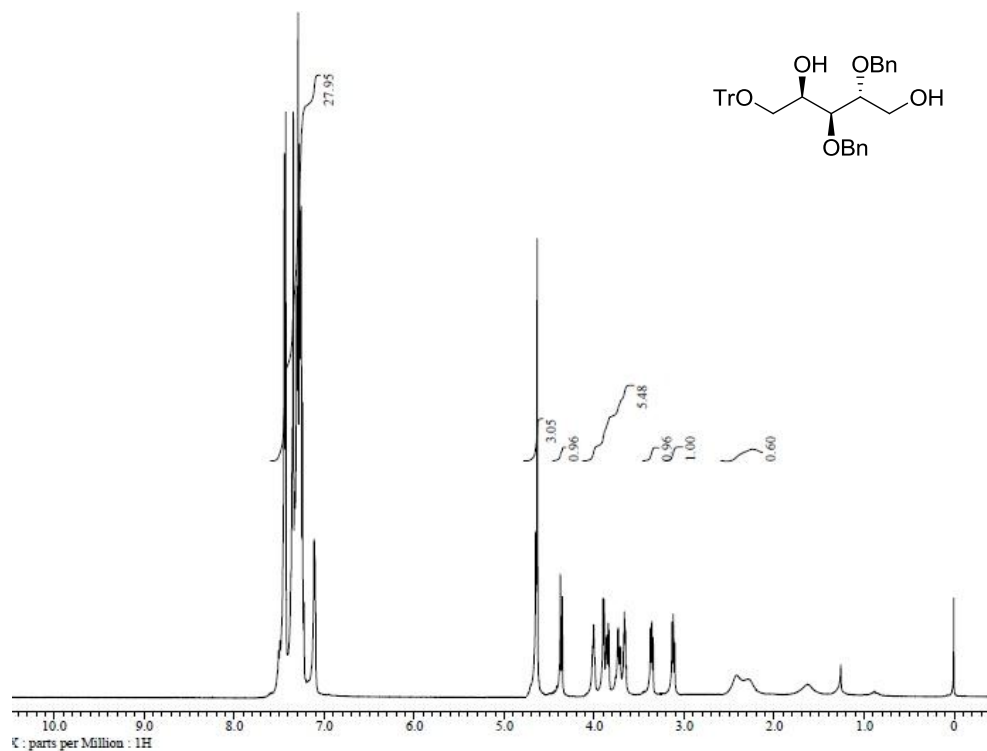


Figure 22.1: ¹H NMR (500 MHz) spectrum of compound **19b**

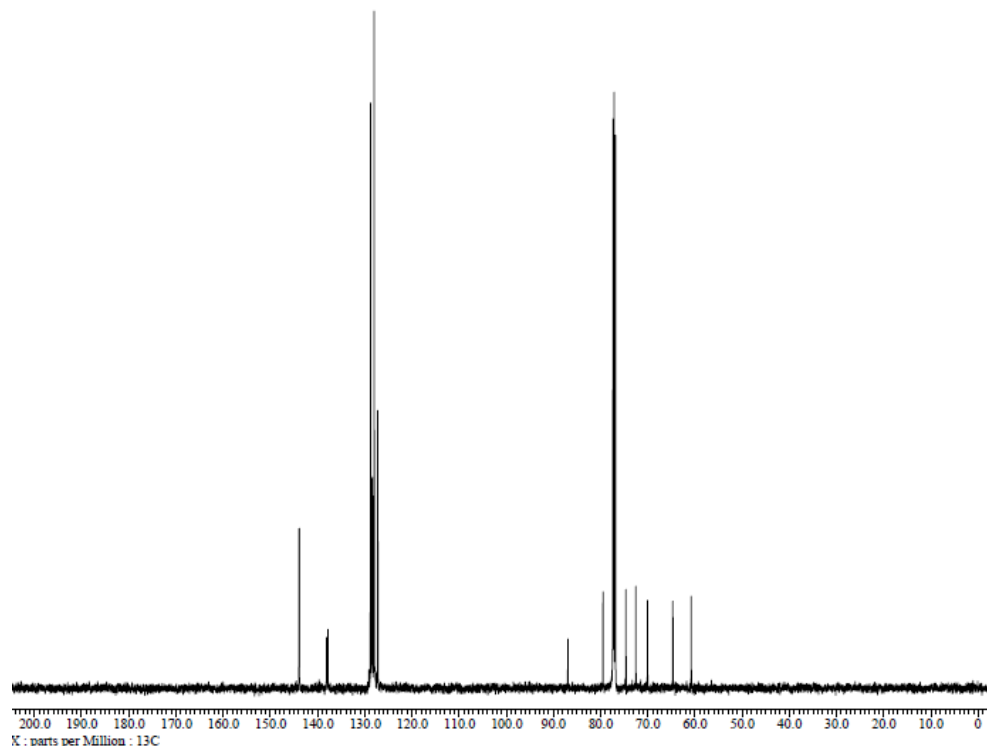


Figure 22.2: ¹³C NMR (125 MHz) spectrum of compound **19b**

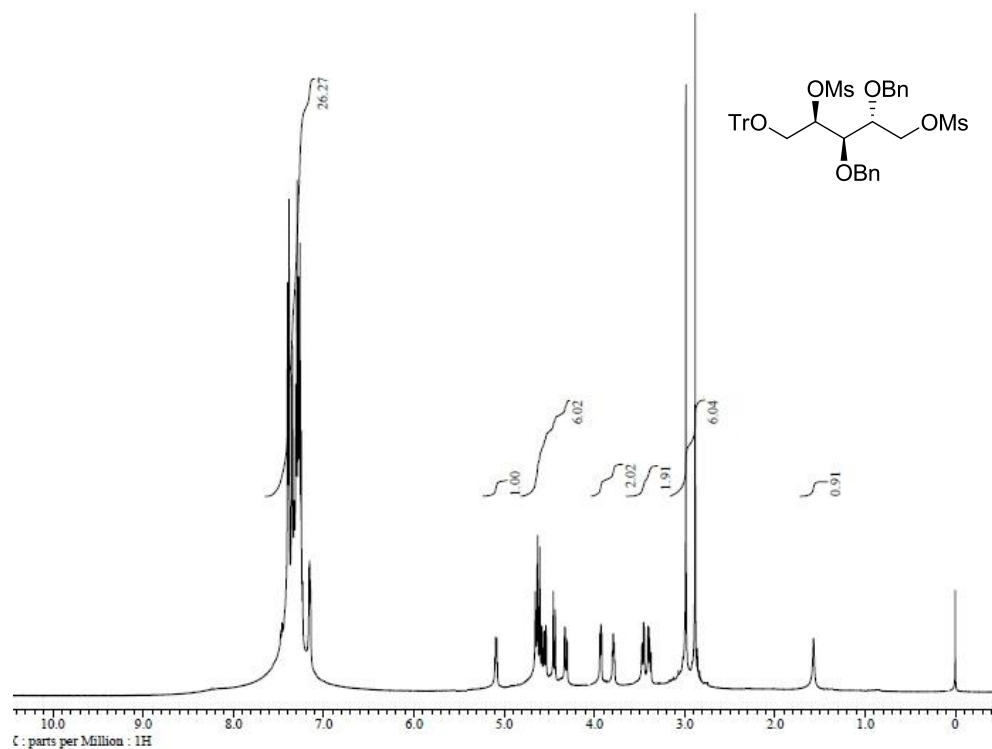


Figure 23.1: ^1H NMR (500 MHz) spectrum of compound **20b**

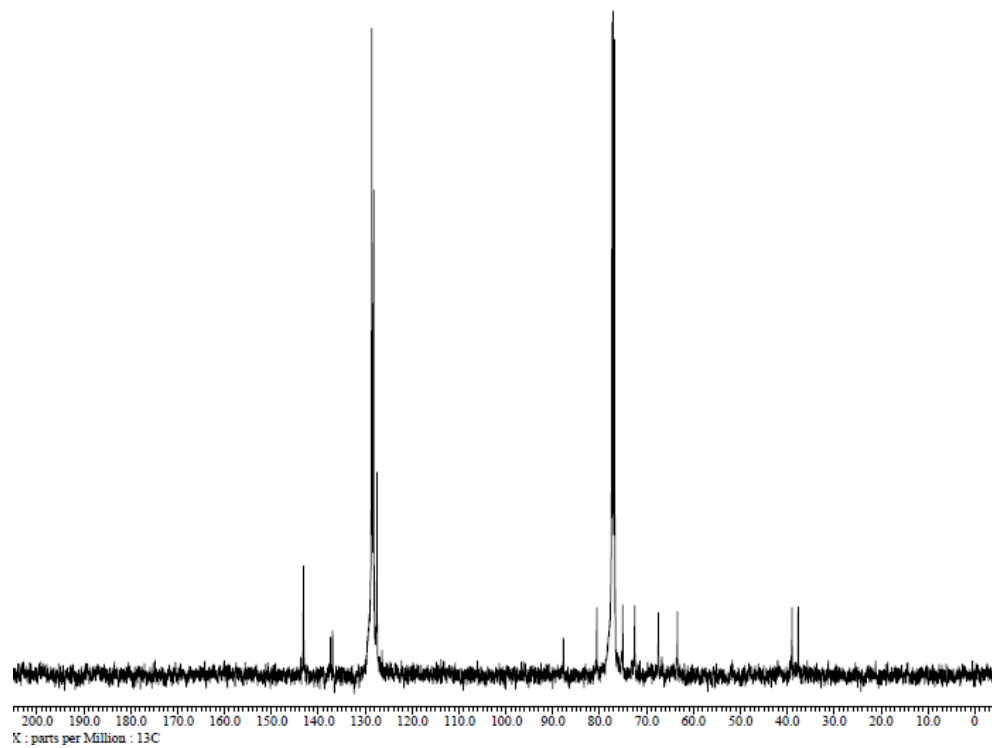


Figure 23.2: ^{13}C NMR (125 MHz) spectrum of compound **20b**

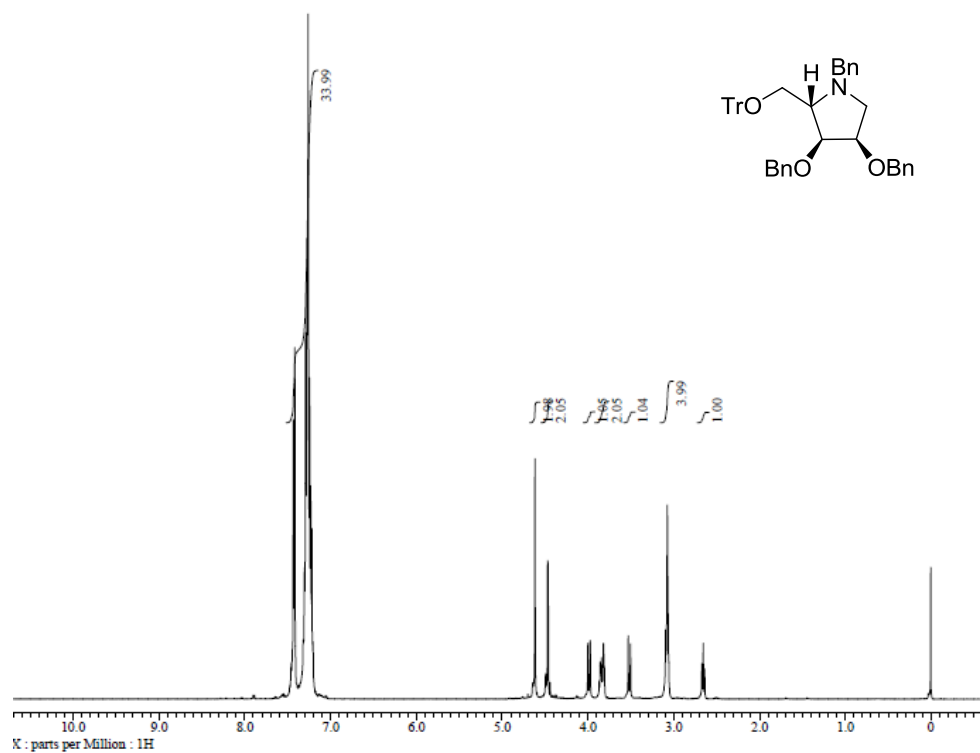


Figure 24.1: ¹H NMR (500 MHz) spectrum of compound **21b**

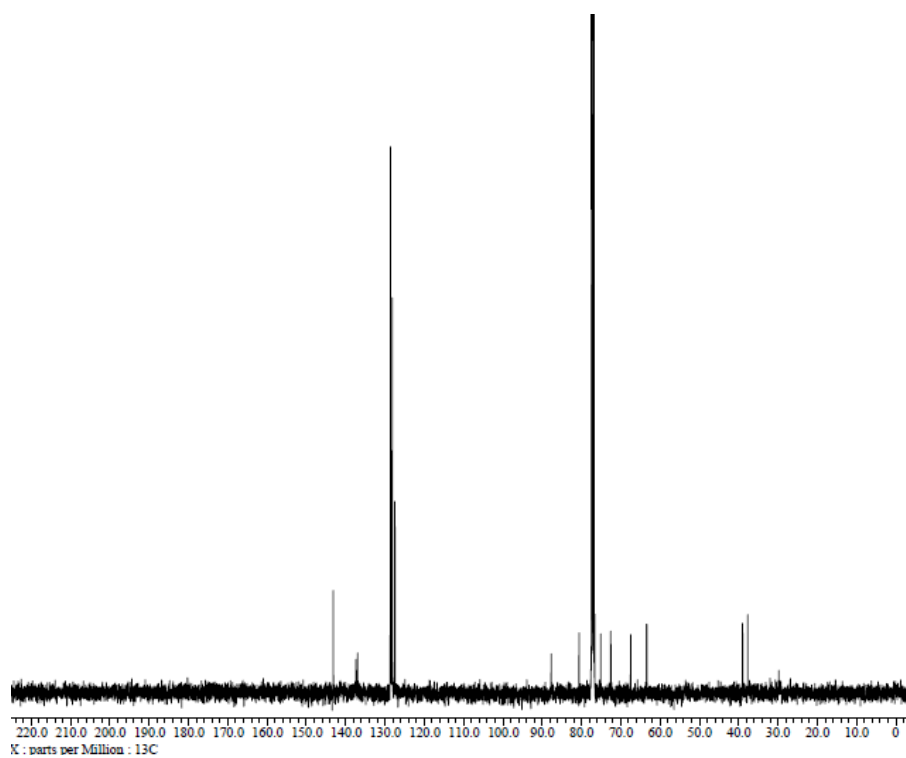


Figure 24.2: ¹³C NMR (125 MHz) spectrum of compound **21b**

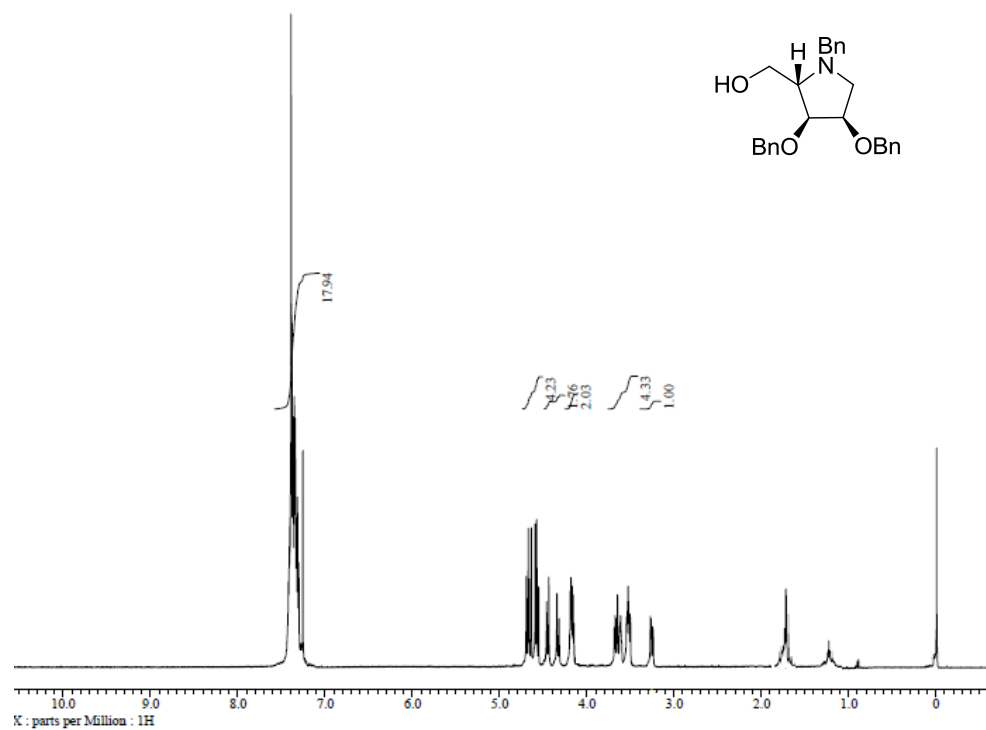


Figure 25.1: ¹H NMR (500 MHz) spectrum of compound **22b**

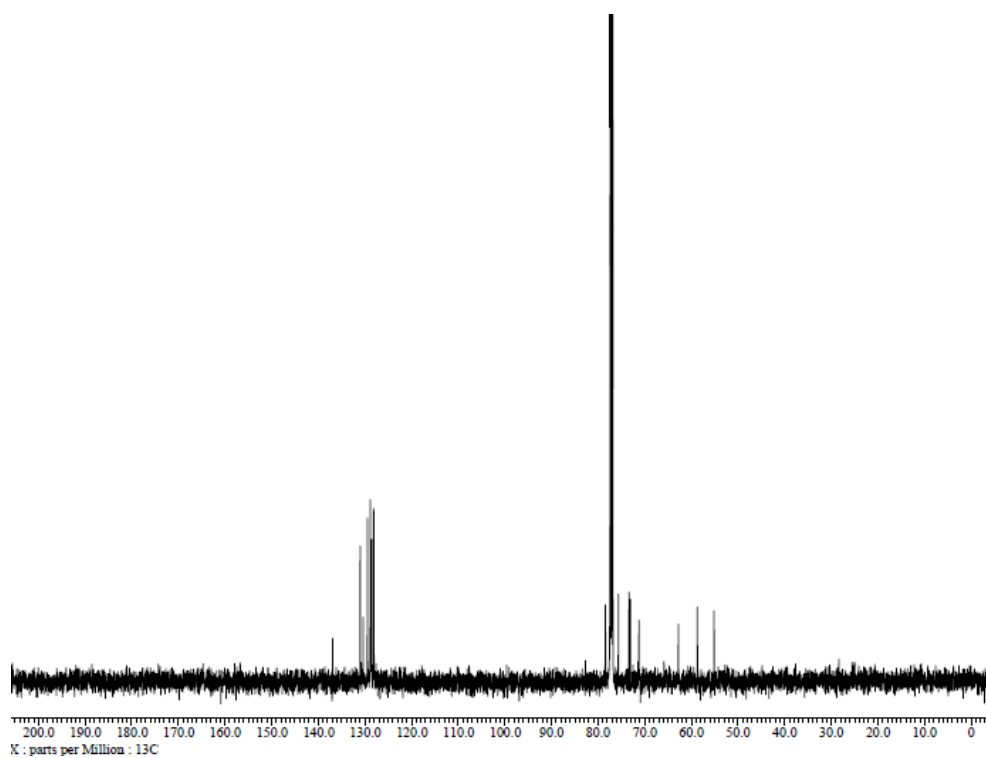


Figure 25.2: ¹³C NMR (125 MHz) spectrum of compound **22b**

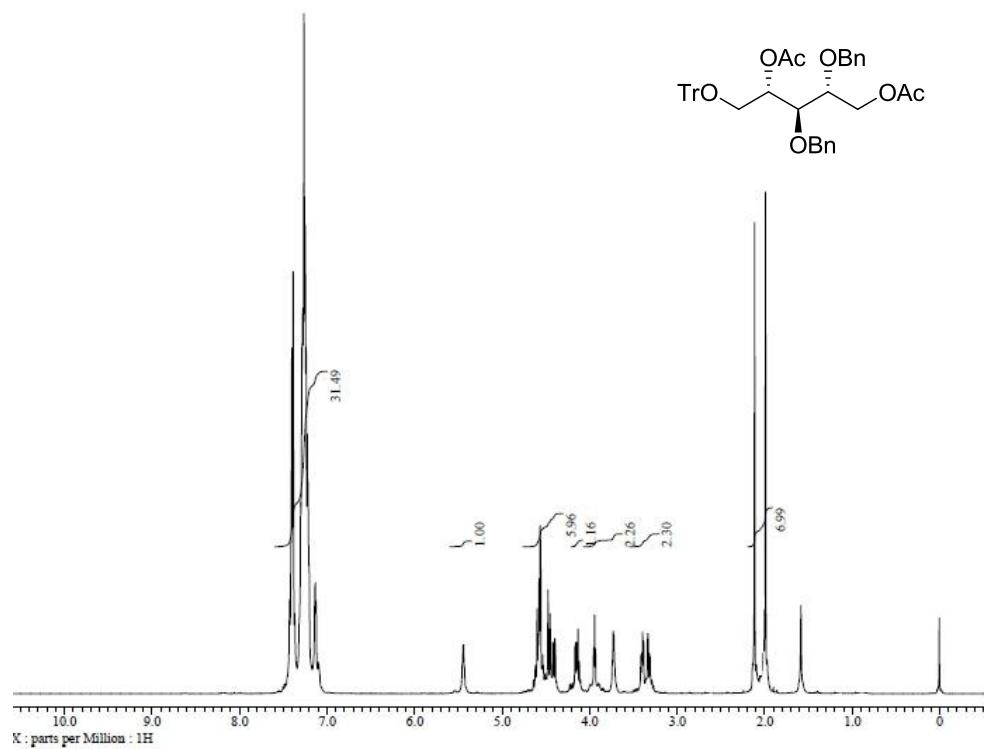


Figure 26.1: ¹H NMR (500 MHz) spectrum of compound **24b**

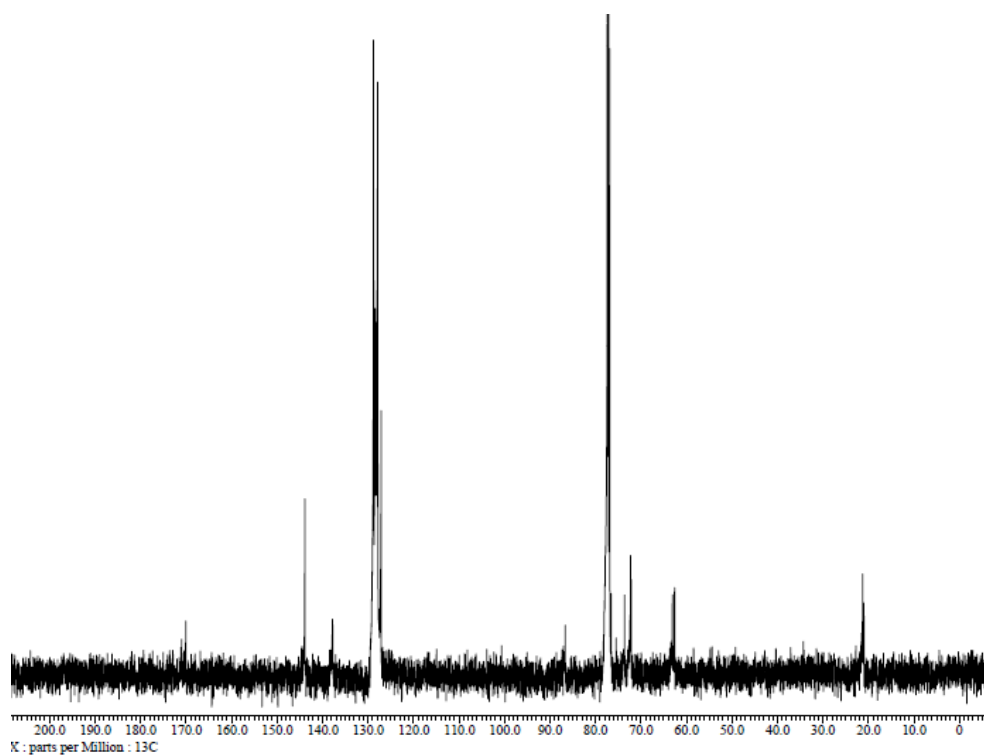


Figure 26.2: ¹³C NMR (125 MHz) spectrum of compound **24b**

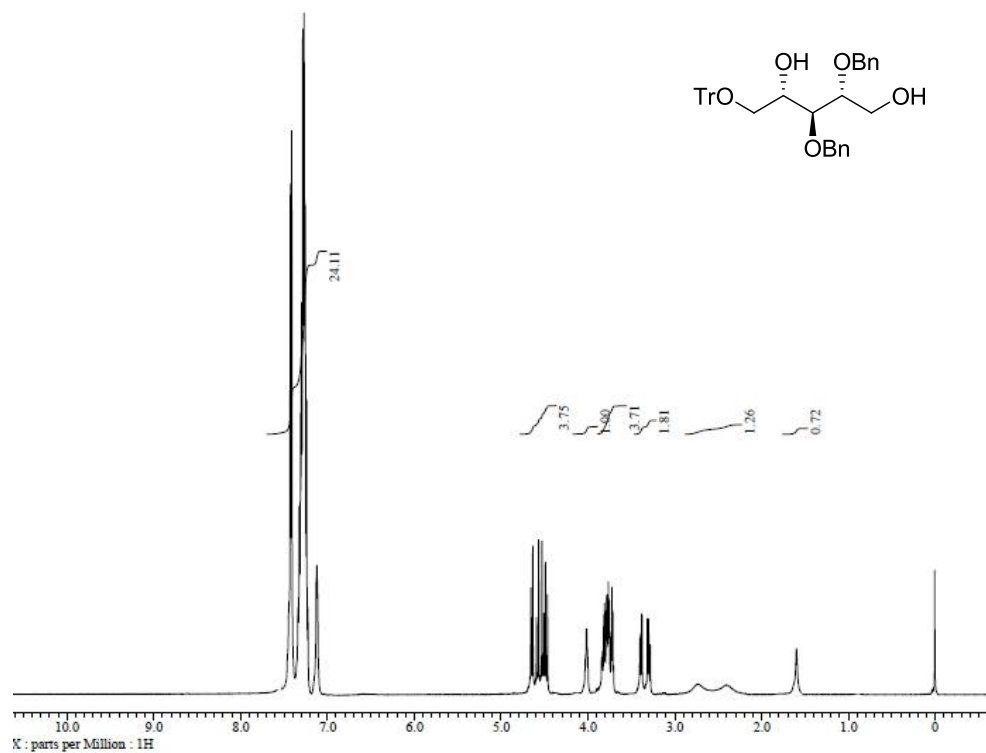


Figure 27.1: ¹H NMR (500 MHz) spectrum of compound **25b**

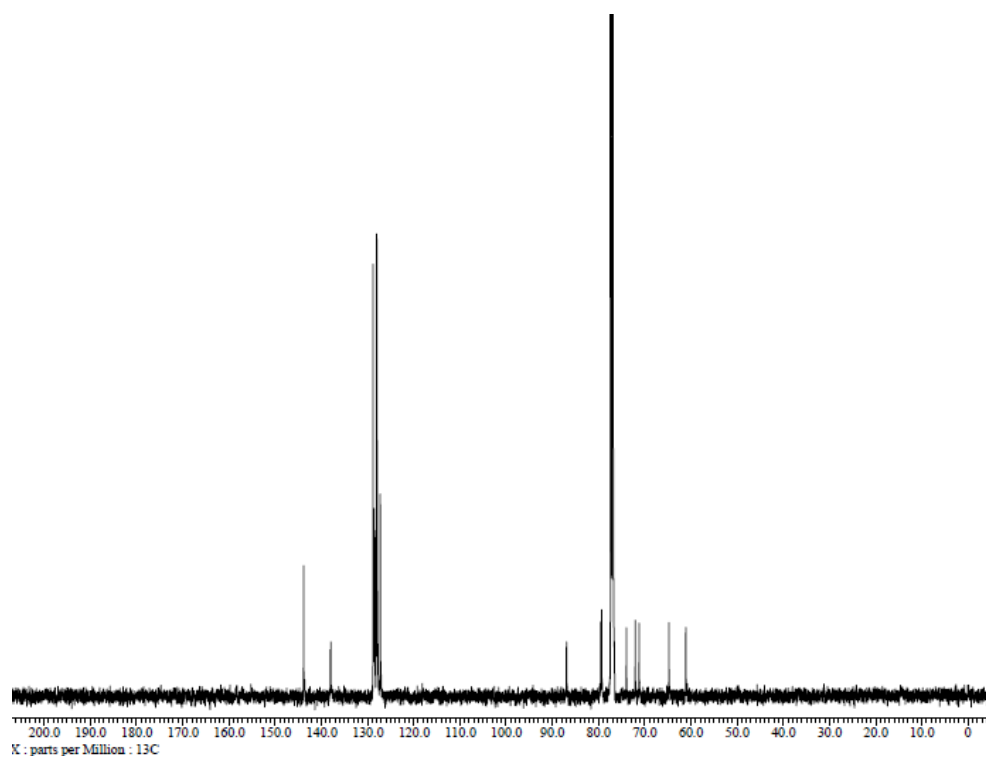


Figure 27.2: ¹³C NMR (125 MHz) spectrum of compound **25b**

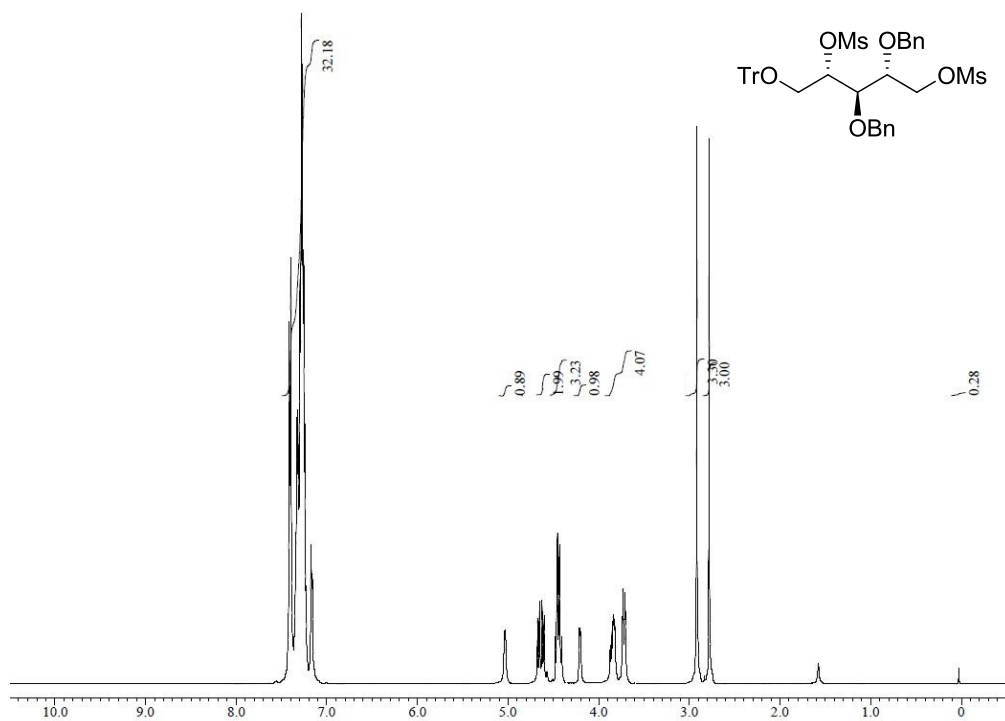


Figure 28.1: ¹H NMR (500 MHz) spectrum of compound **26b**

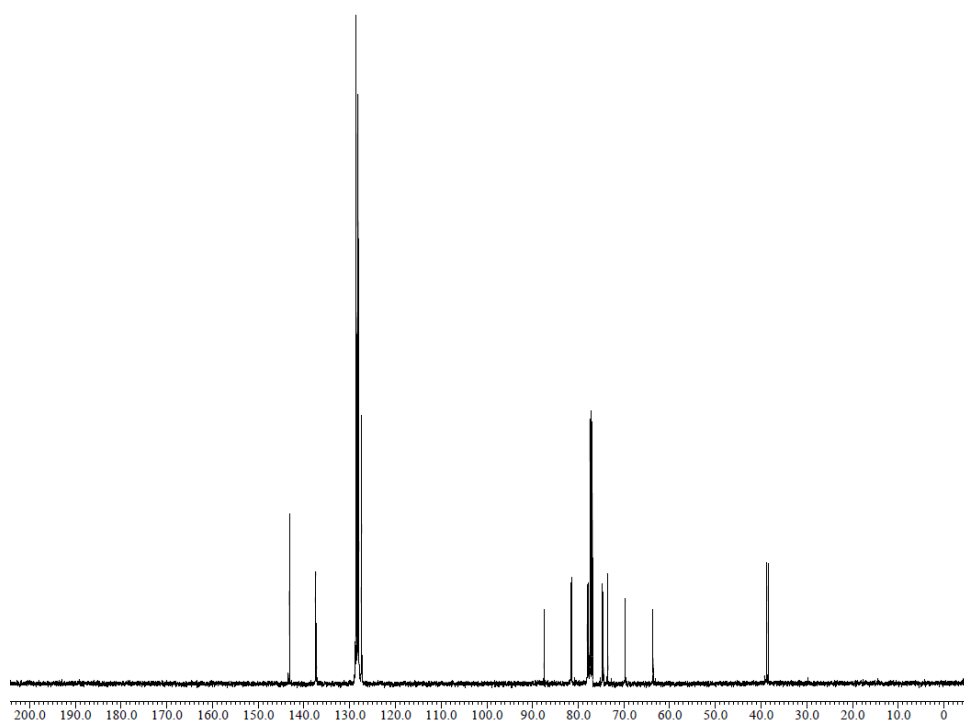


Figure 28.2: ¹³C NMR (125 MHz) spectrum of compound **26b**

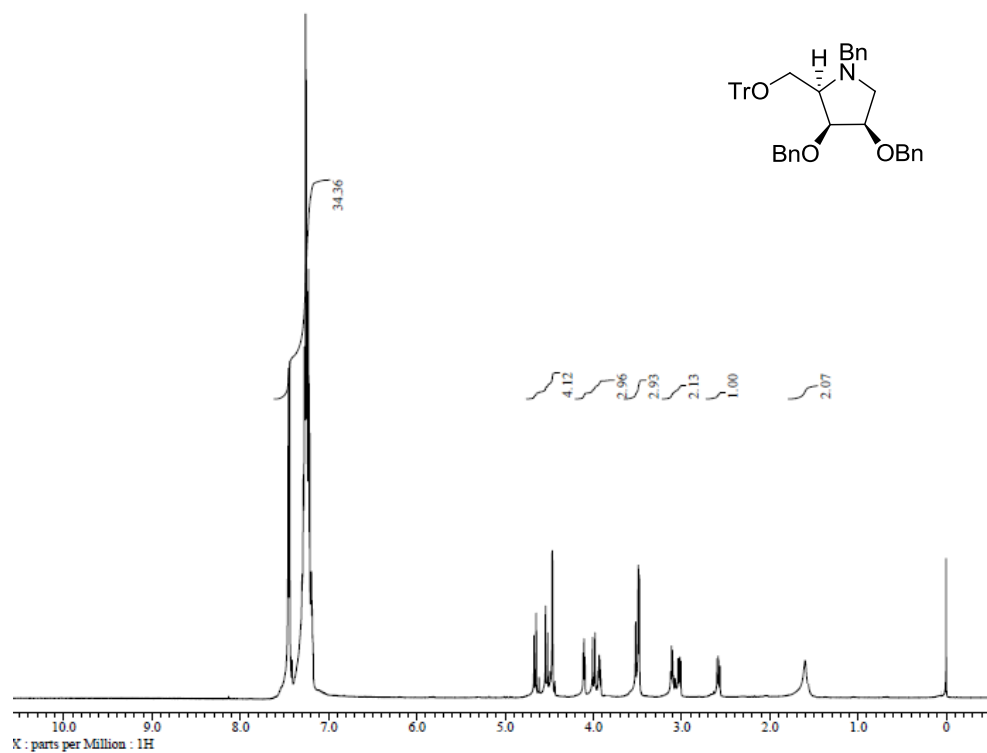


Figure 29.1: ¹H NMR (500 MHz) spectrum of compound 27b

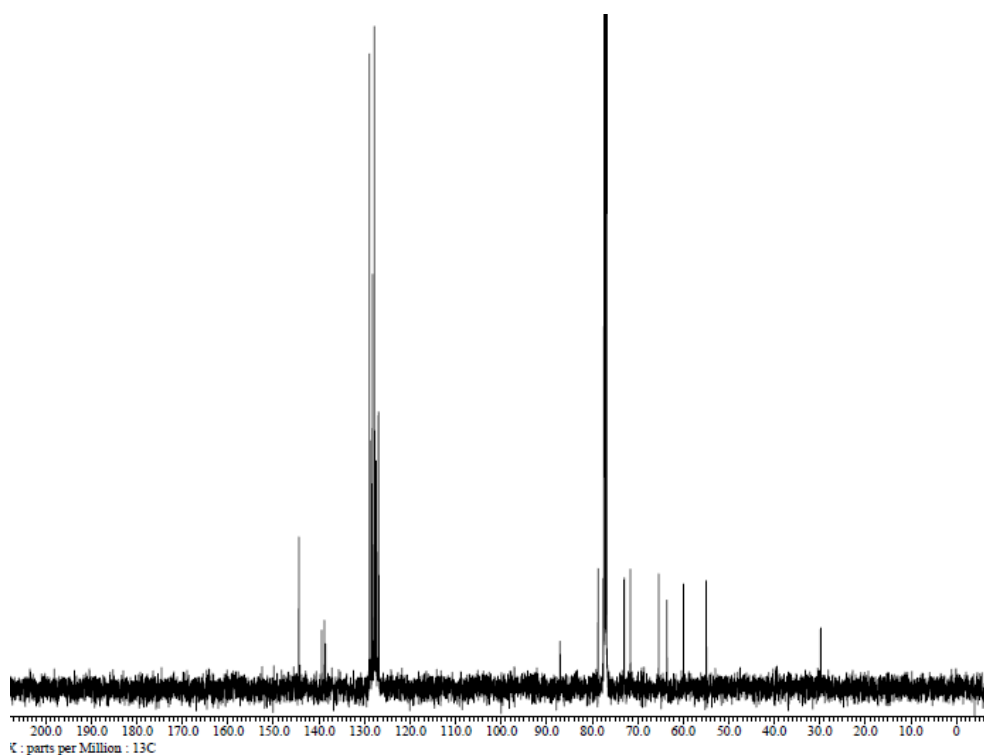


Figure 29.2: ¹³C NMR (125 MHz) spectrum of compound 27b

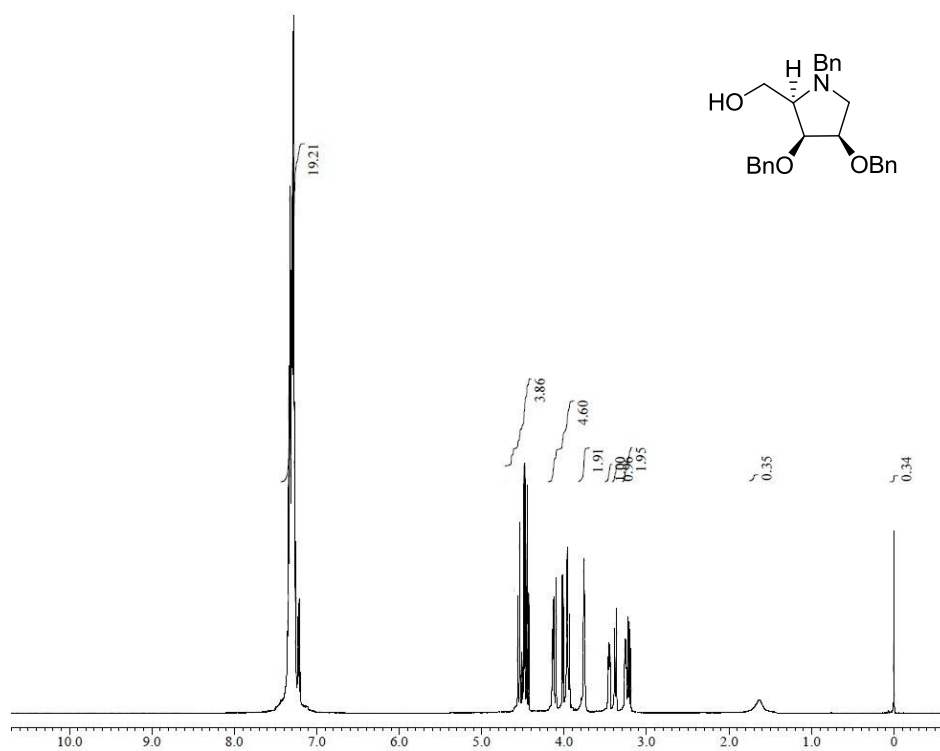


Figure 30.1: ¹H NMR (500 MHz) spectrum of compound **28b**

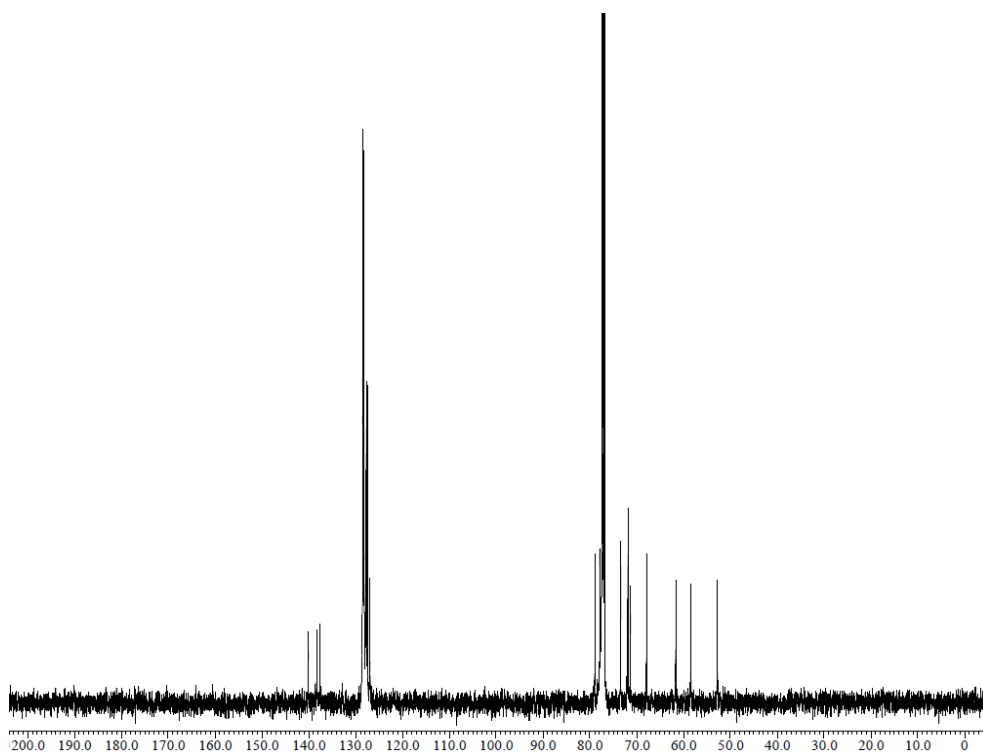


Figure 30.2: ¹³C NMR (125 MHz) spectrum of compound **28b**

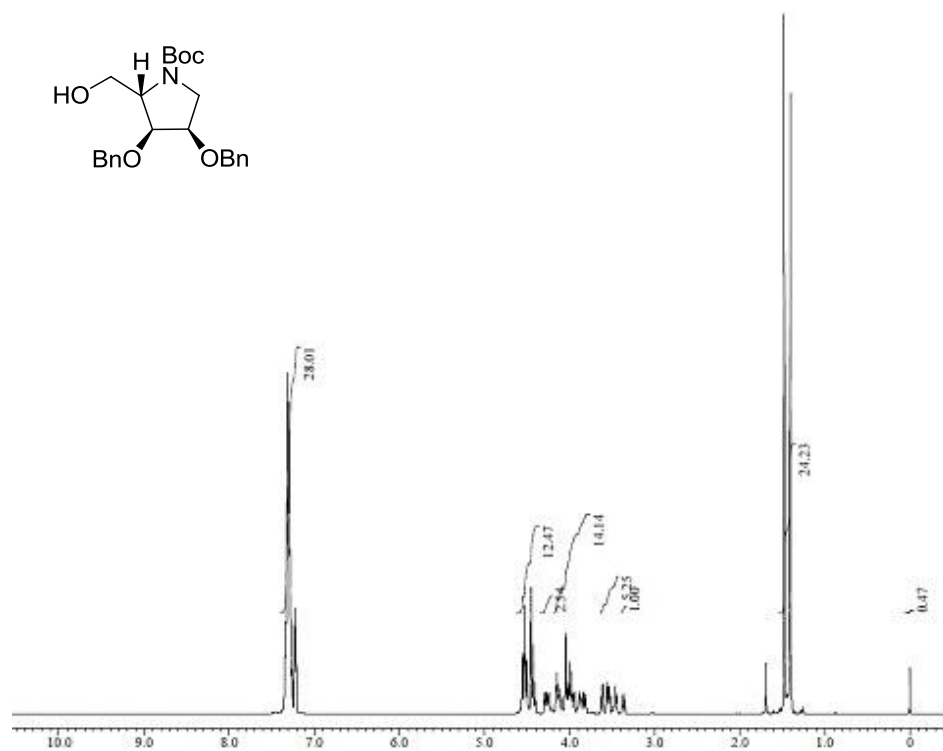


Figure 31.1: ¹H NMR (500 MHz) spectrum of compound **34a**

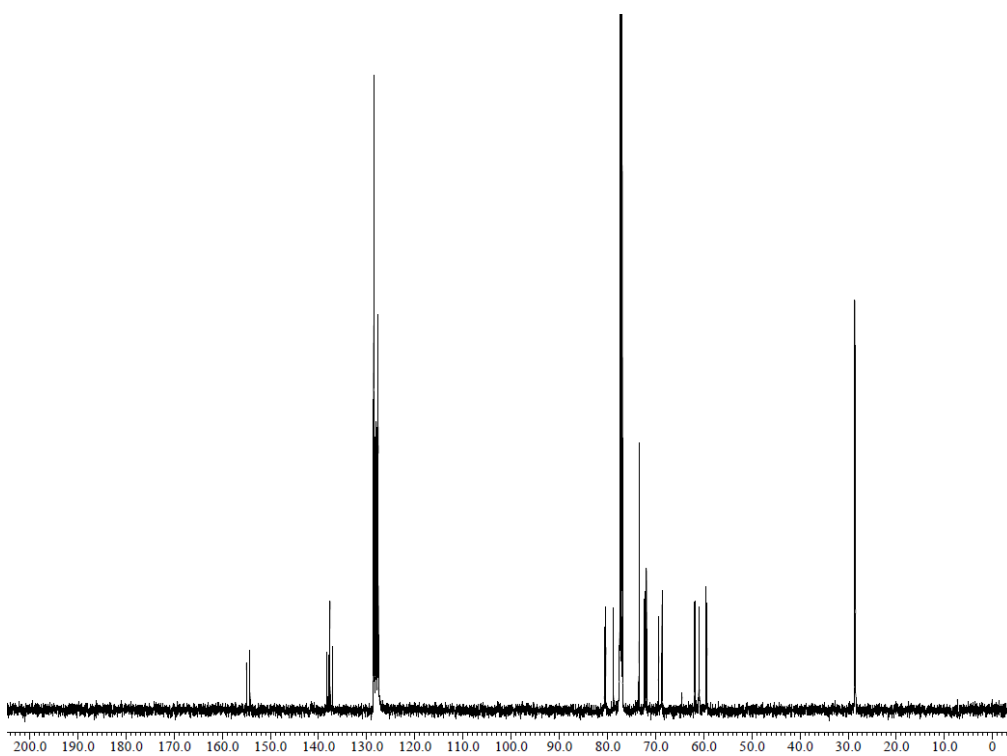


Figure 31.2: ¹³C NMR (125 MHz) spectrum of compound **34a**

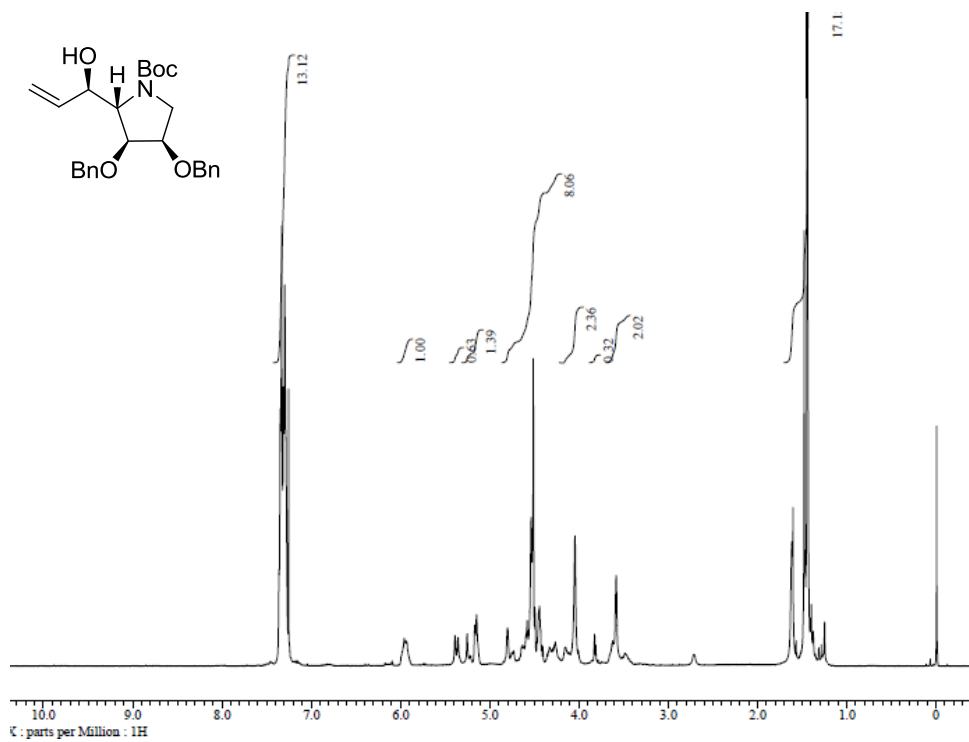


Figure 32.1: ¹H NMR (500 MHz) spectrum of compound 35a

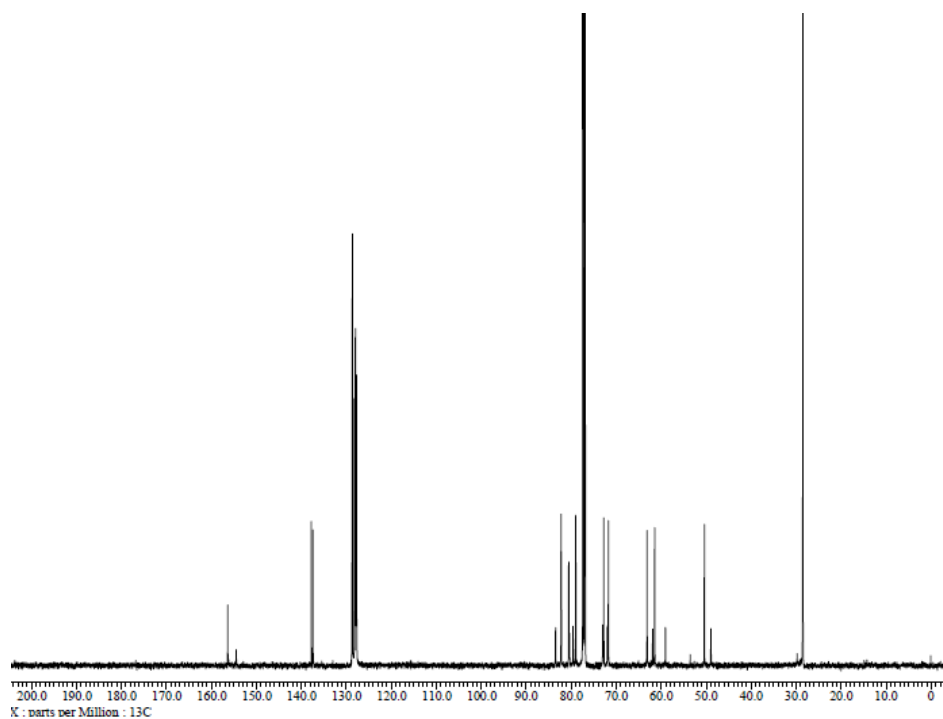


Figure 32.2: ¹³C NMR (125 MHz) spectrum of compound 35a

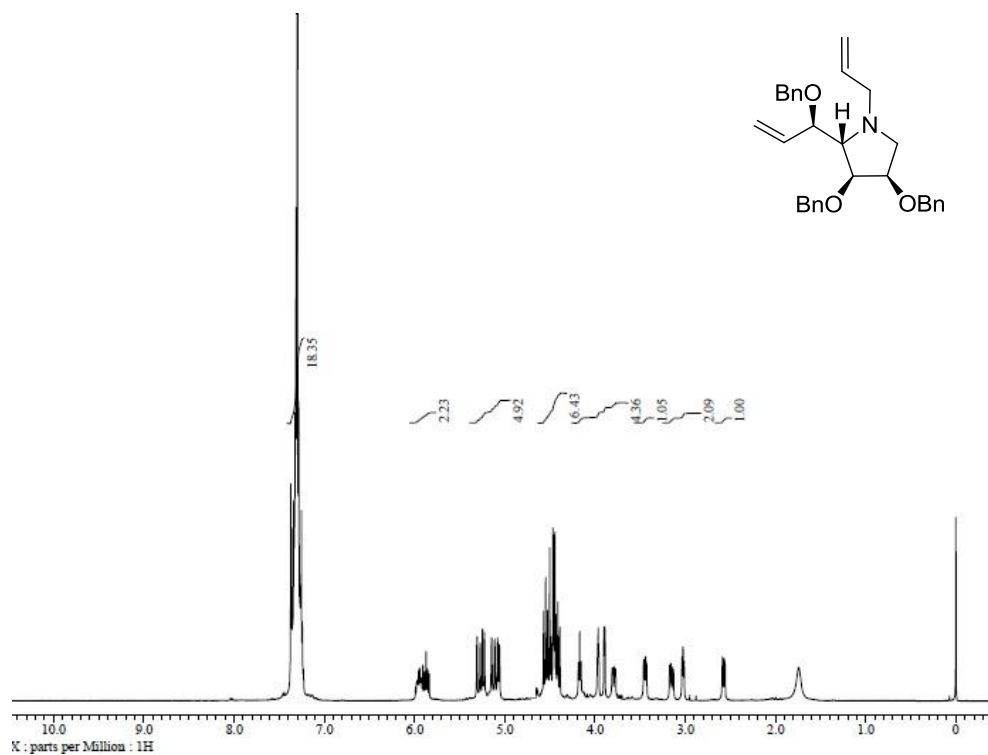


Figure 33.1: ¹H NMR (500 MHz) spectrum of compound 40a

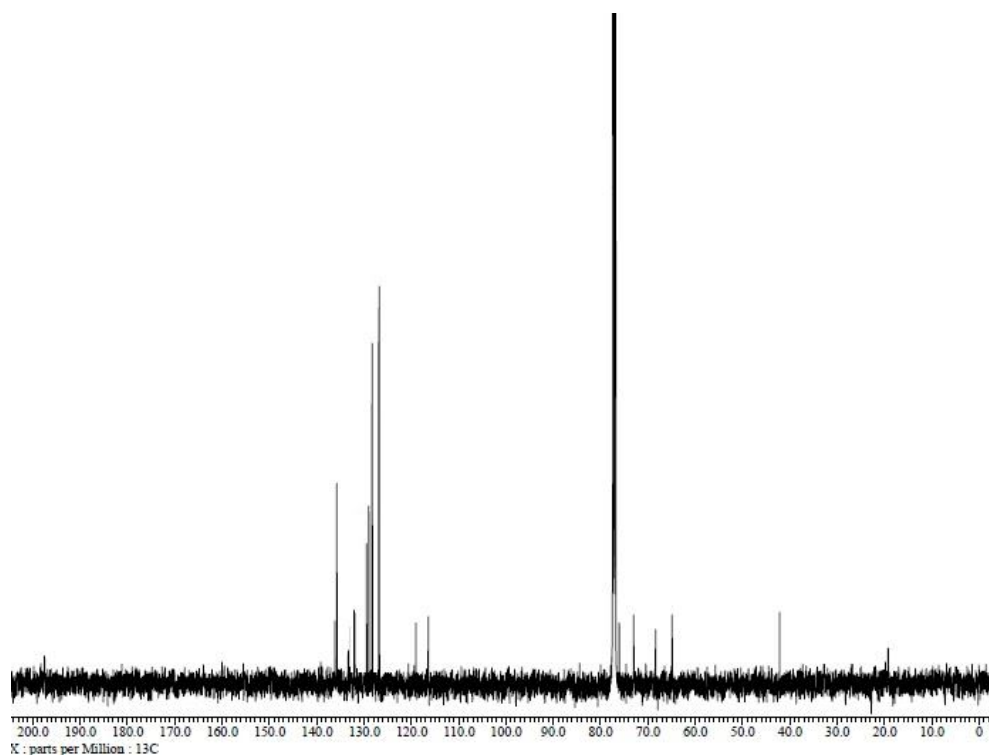


Figure 33.2: ¹³C NMR (125 MHz) spectrum of compound 40a

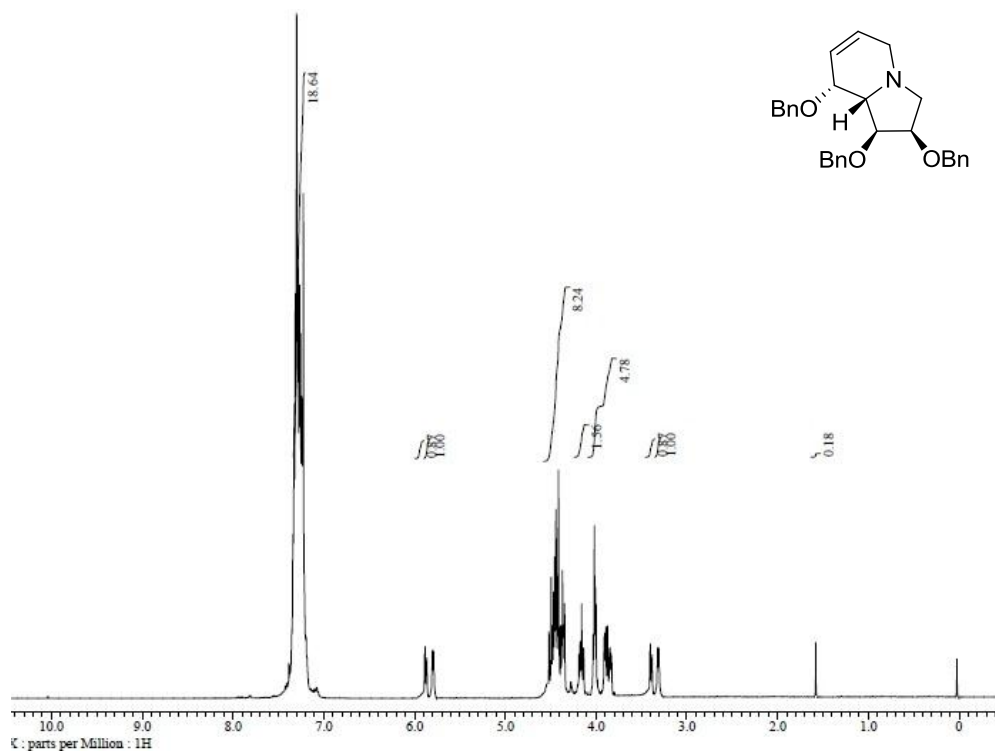


Figure 34.1: ¹H NMR (500 MHz) spectrum of compound 41a

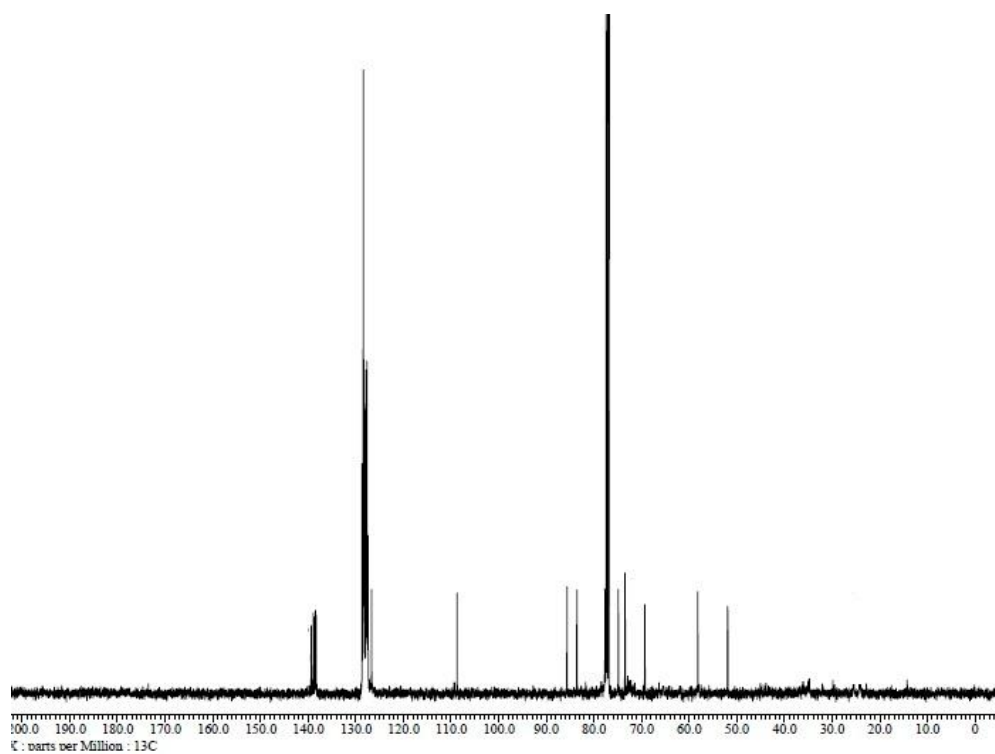


Figure 34.2: ¹³C NMR (125 MHz) spectrum of compound 41a

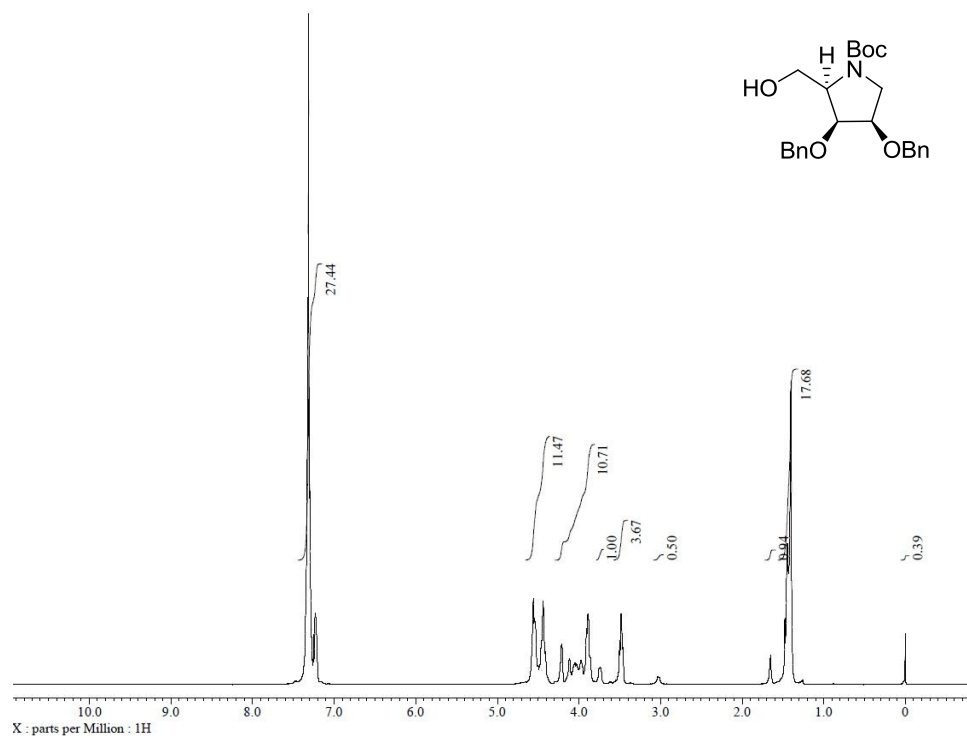


Figure 35.1: ¹H NMR (500 MHz) spectrum of compound **34b**

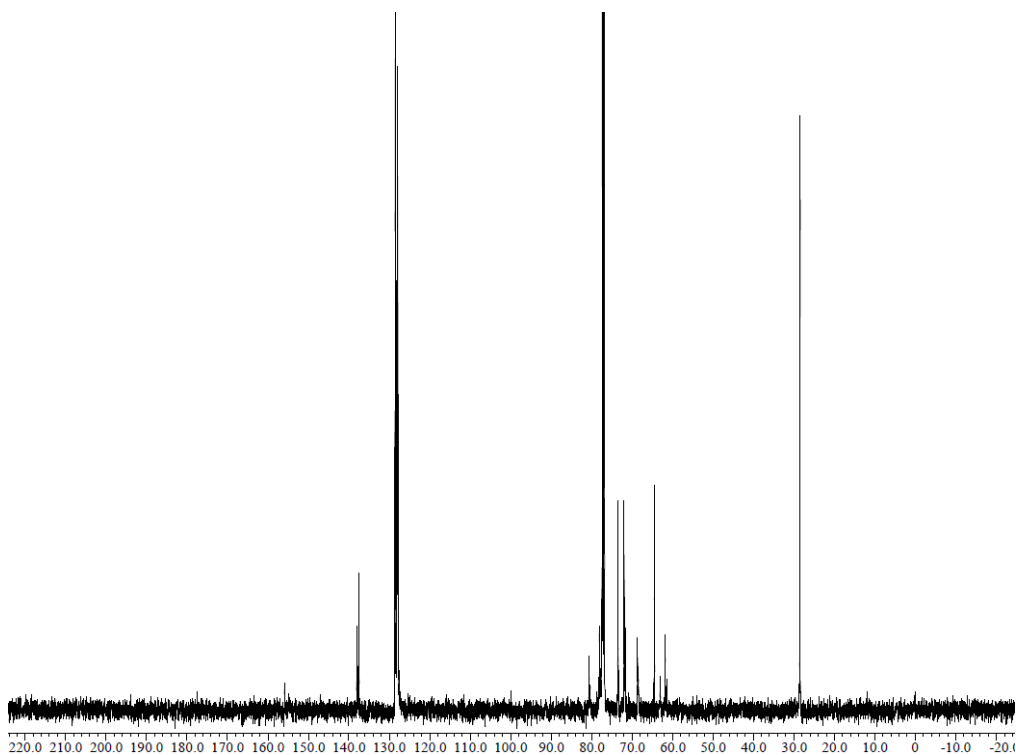


Figure 35.2: ¹³C NMR (125 MHz) spectrum of compound **34b**

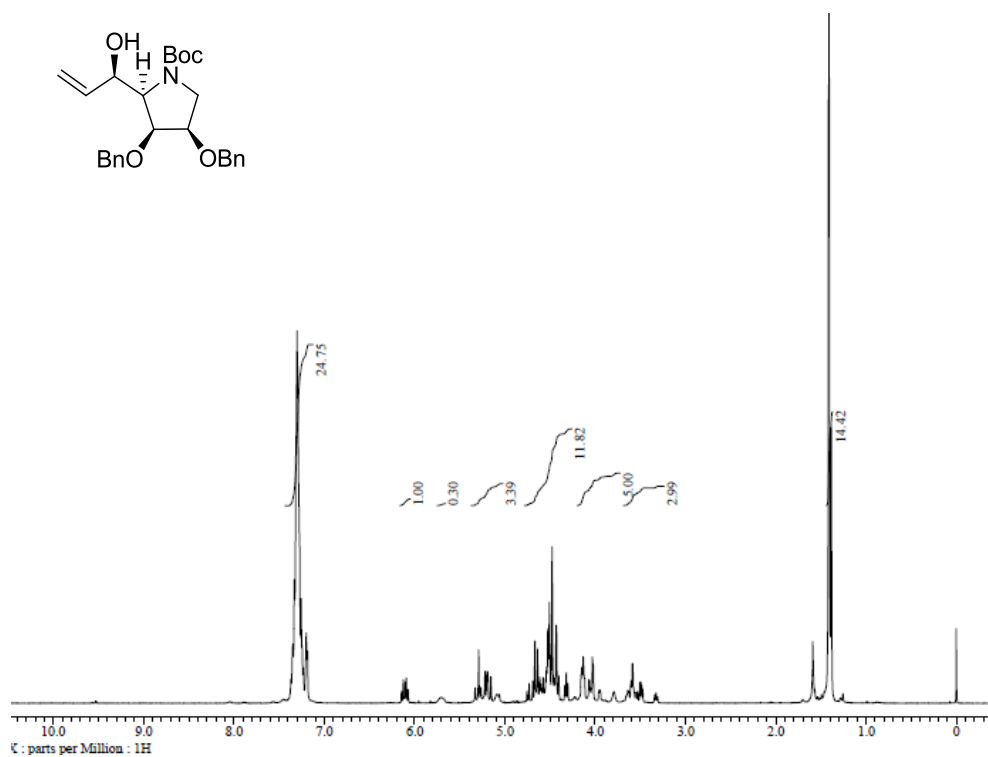


Figure 36.1: ¹H NMR (500 MHz) spectrum of compound 35b

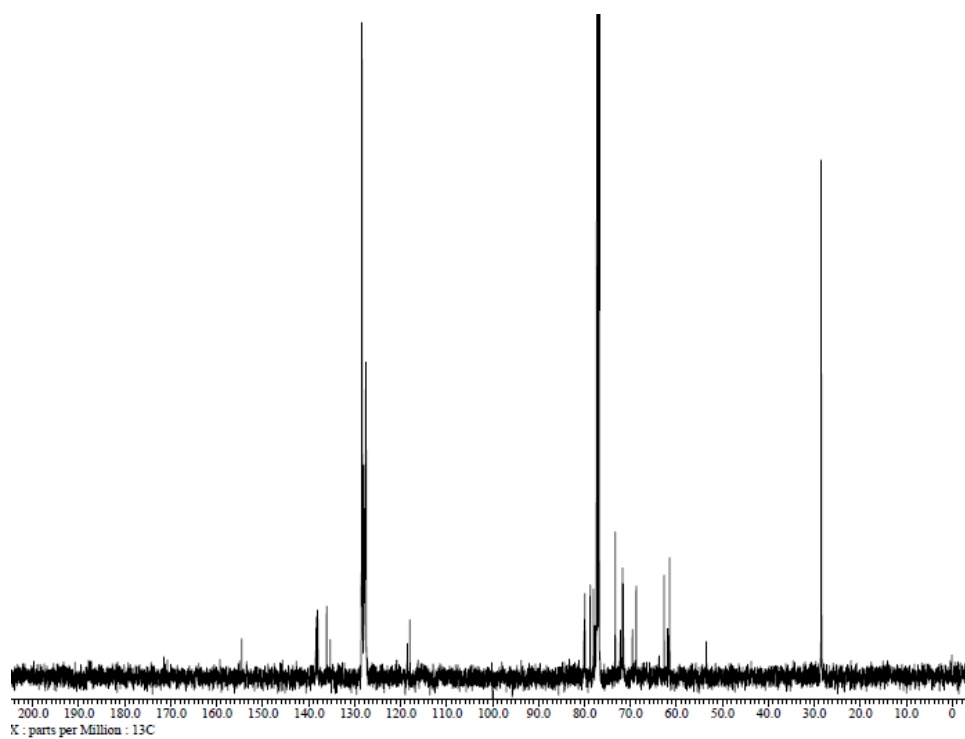


Figure 36.2: ¹³C NMR (125 MHz) spectrum of compound 35b

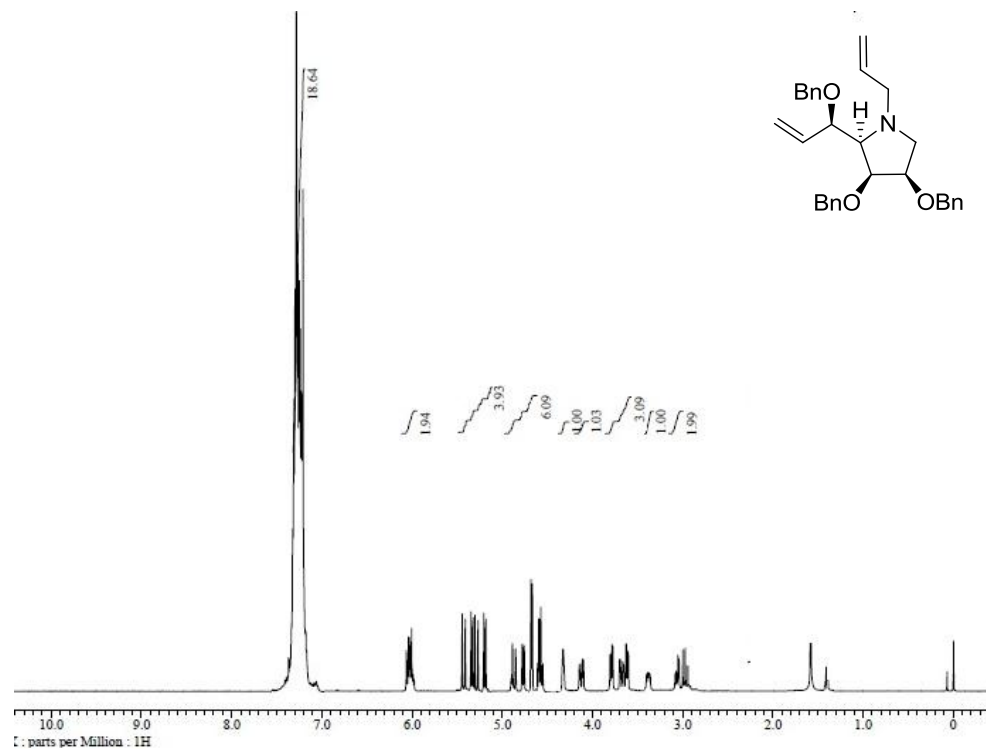


Figure 37.1: ¹H NMR (500 MHz) spectrum of compound **40b**

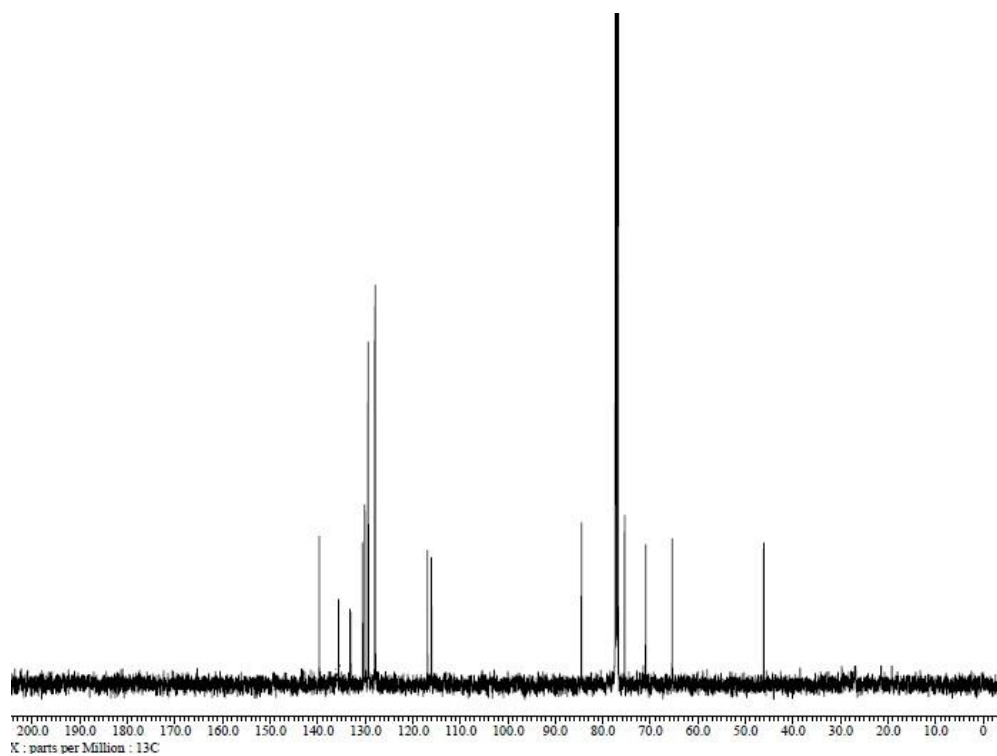


Figure 37.2: ¹³C NMR (125 MHz) spectrum of compound **40b**

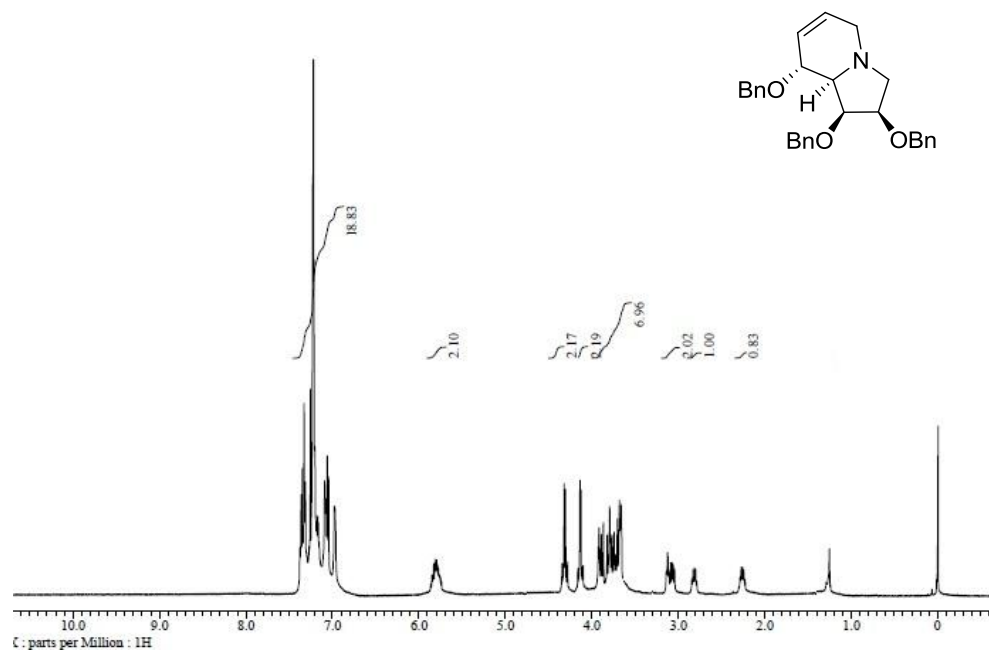


Figure 38.1: ¹H NMR (500 MHz) spectrum of compound **41b**

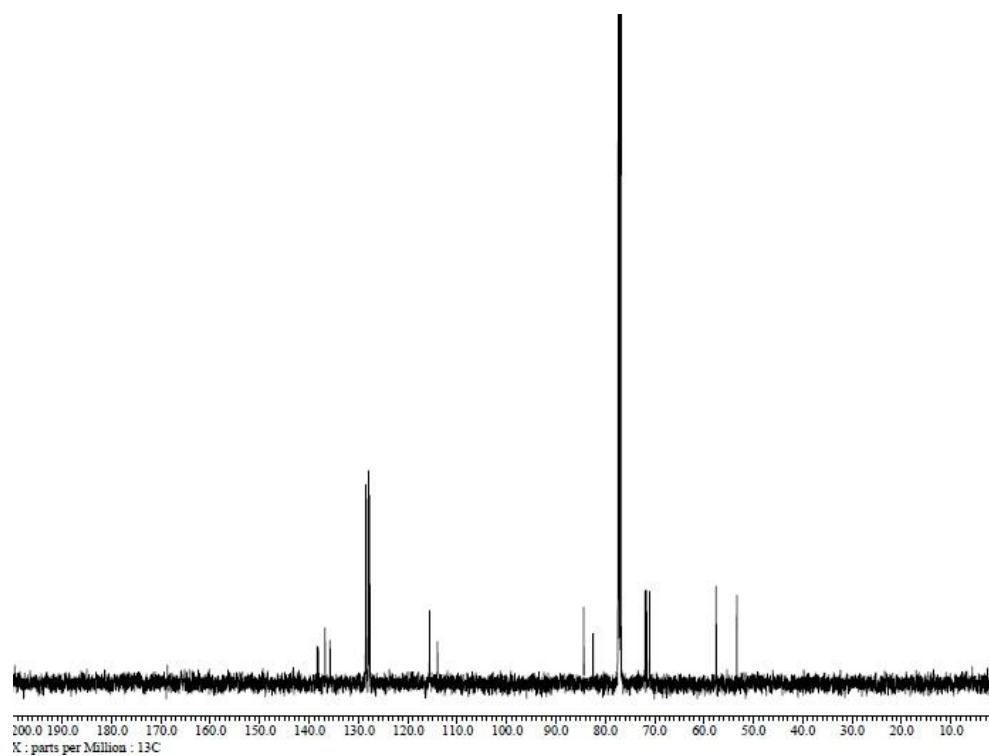


Figure 38.2: ¹³C NMR (125 MHz) spectrum of compound **41b**

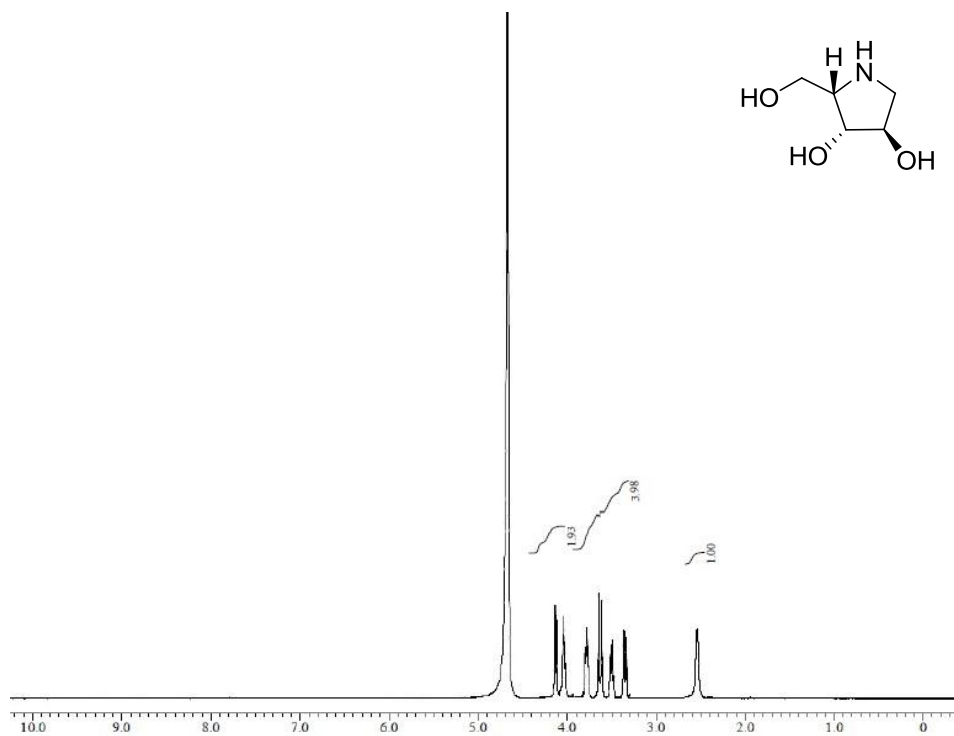


Figure 39.1: ¹H NMR (500 MHz) spectrum of compound 23a

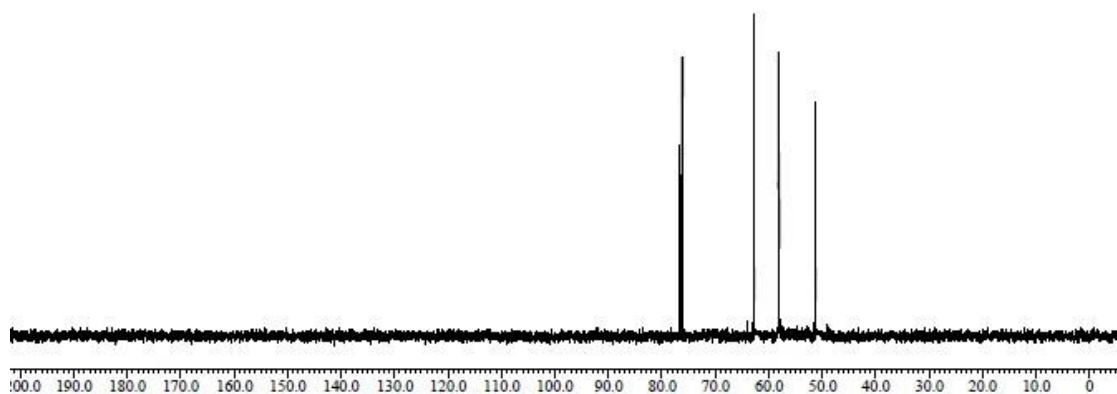


Figure 39.2: ¹³C NMR (125 MHz) spectrum of compound 23a

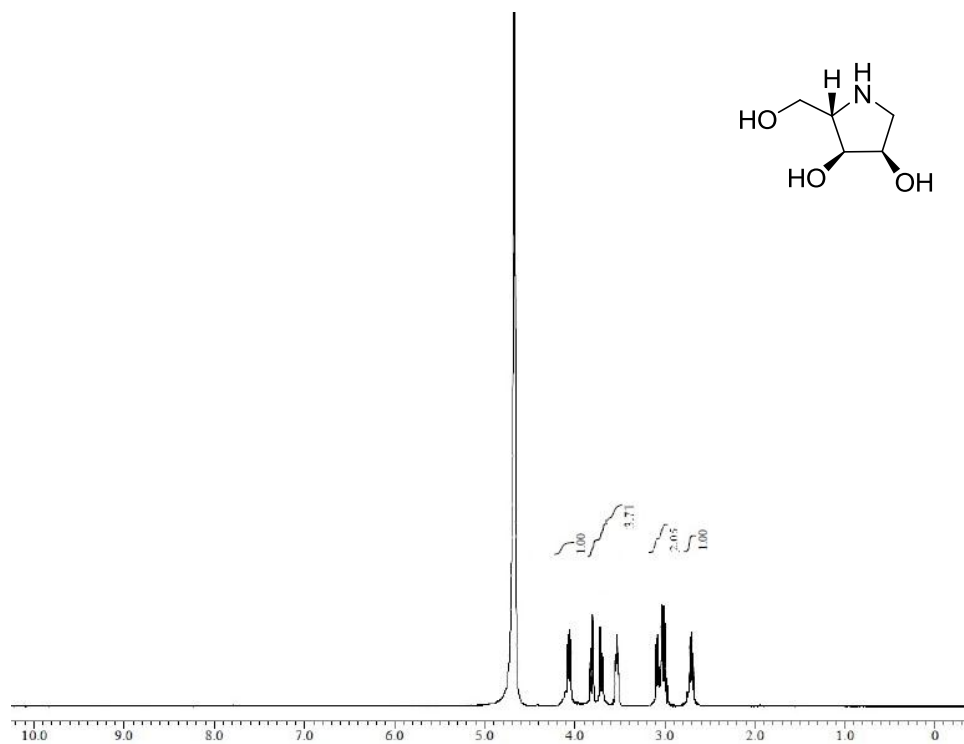


Figure 40.1: ^1H NMR (500 MHz) spectrum of compound 23b

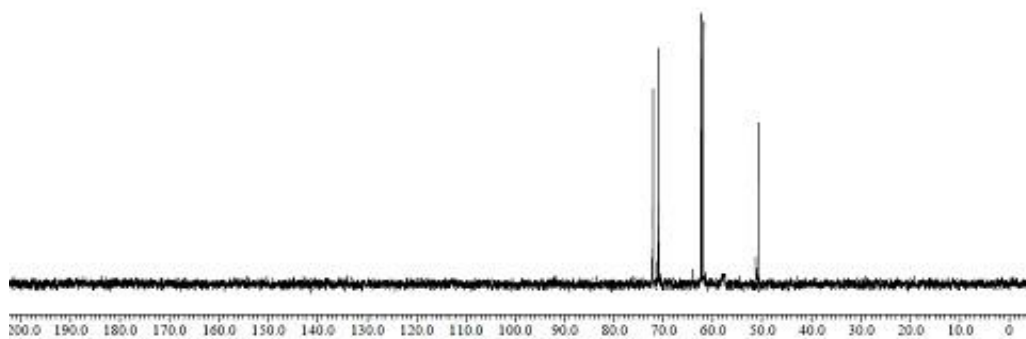


Figure 40.2: ^{13}C NMR (125 MHz) spectrum of compound 23b

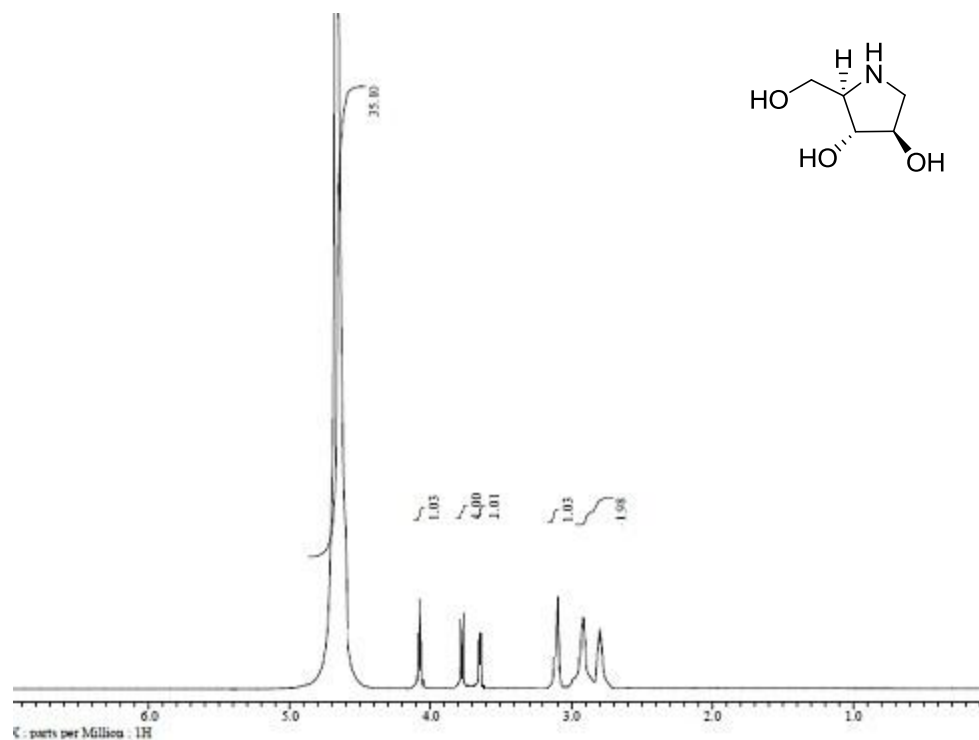


Figure 41.1: ^1H NMR (500 MHz) spectrum of compound **1**

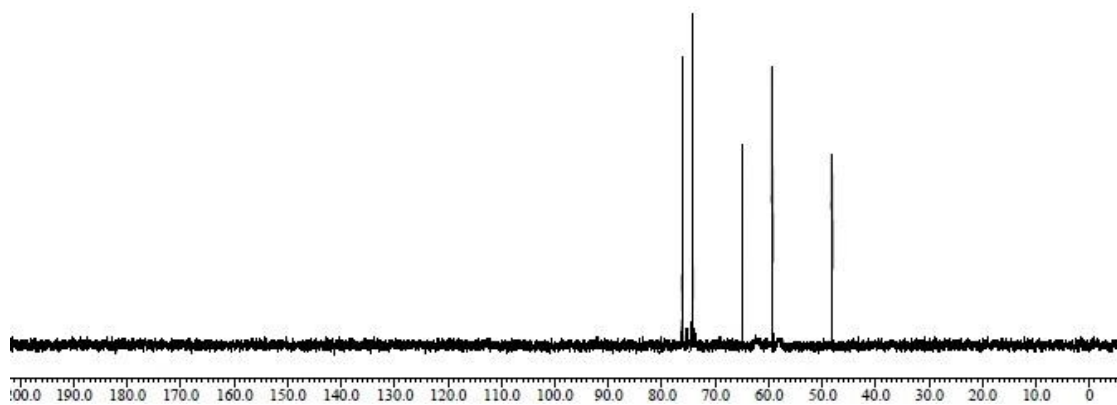


Figure 41.2: ^{13}C NMR (125 MHz) spectrum of compound **1**

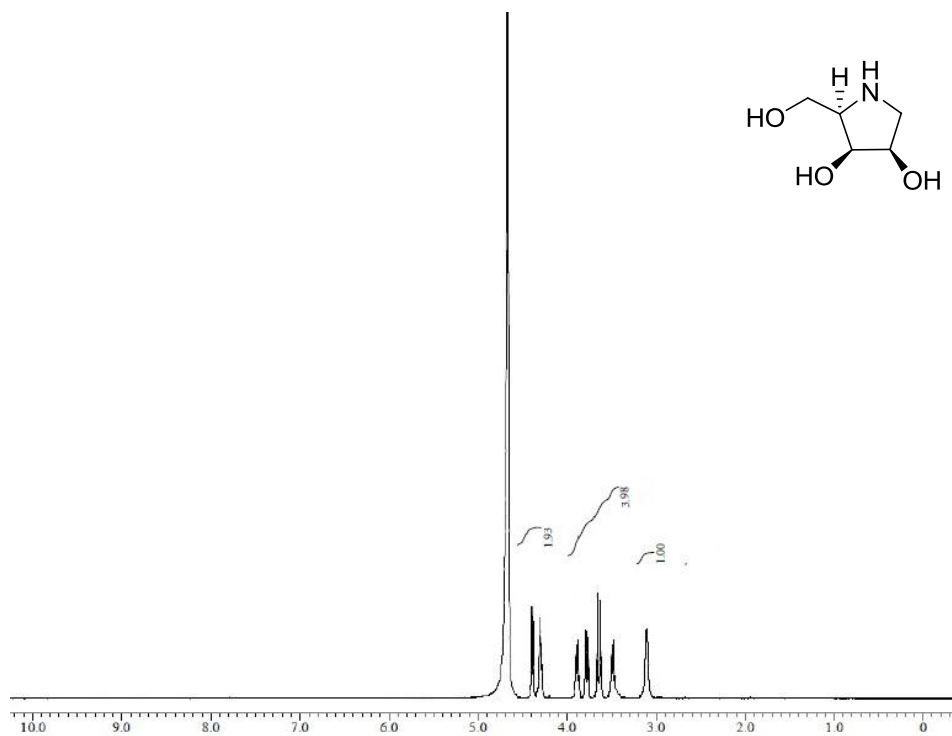


Figure 42.1: ¹H NMR (500 MHz) spectrum of compound 29

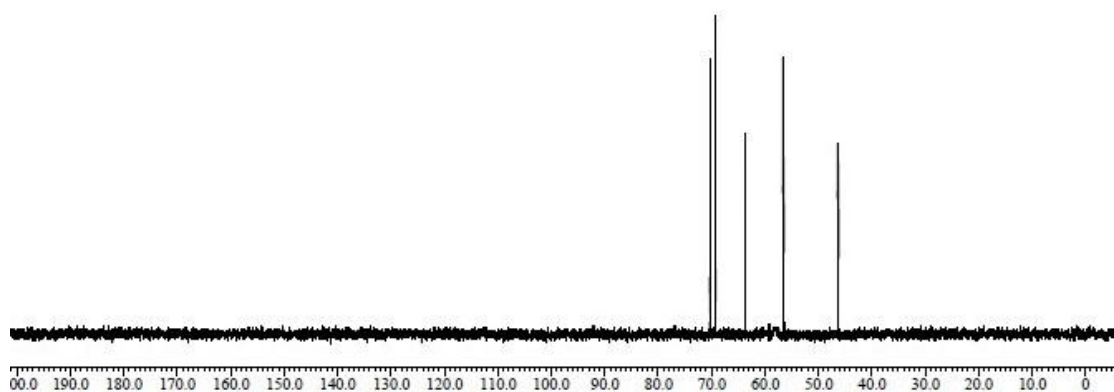


Figure 42.2: ¹³C NMR (125 MHz) spectrum of compound 29

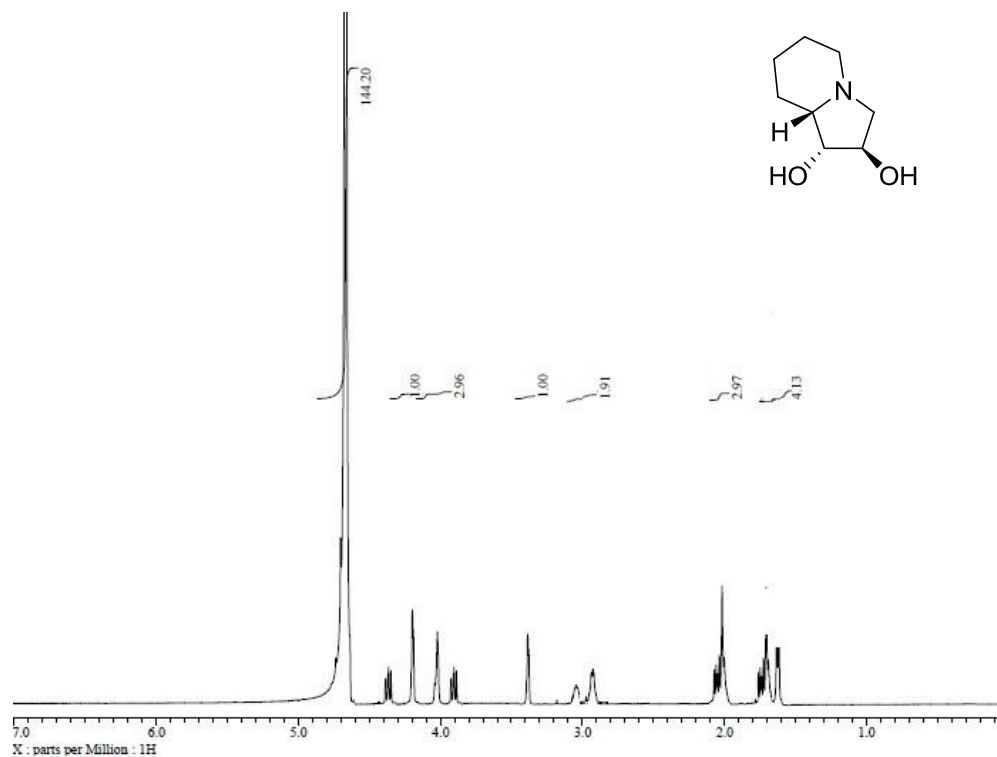


Figure 43.1: ^1H NMR (500 MHz) spectrum of compound 12

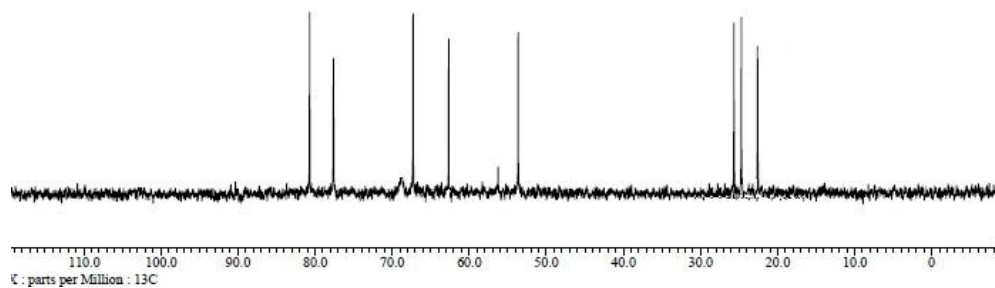


Figure 43.2: ^{13}C NMR (125 MHz) spectrum of compound 12

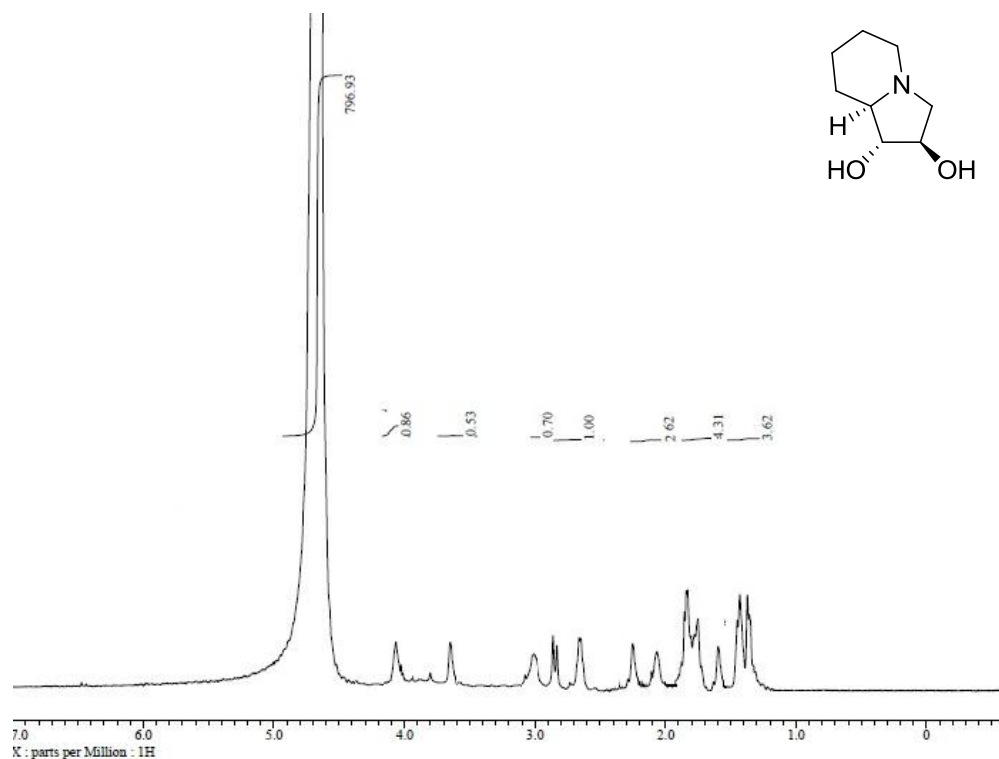


Figure 44.1: ¹H NMR (500 MHz) spectrum of compound **8**

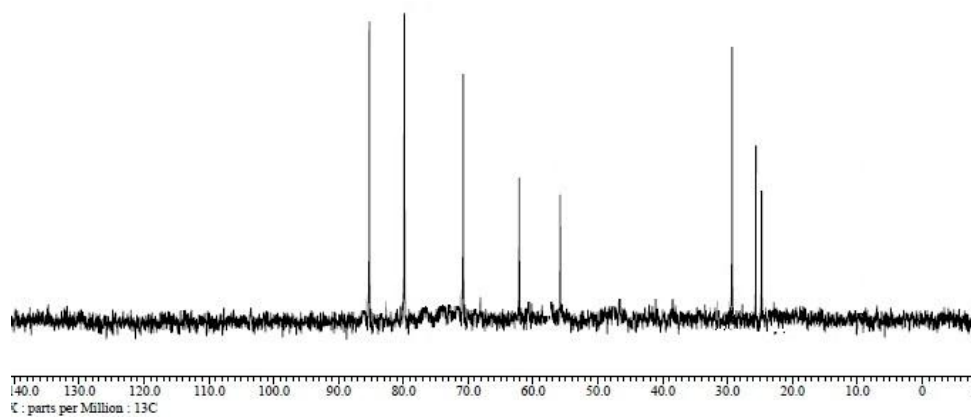


Figure 44.2: ¹³C NMR (125 MHz) spectrum of compound **8**

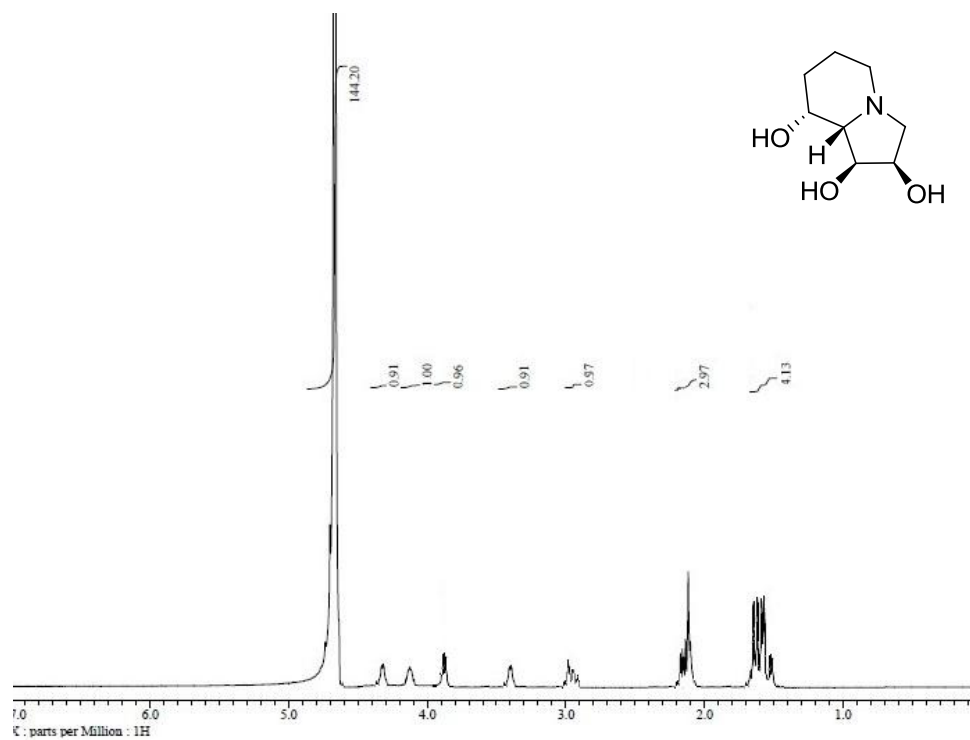


Figure 45.1: ¹H NMR (500 MHz) spectrum of compound 13

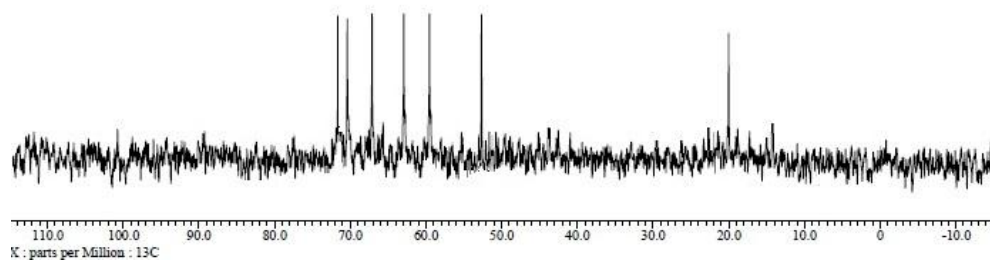


Figure 45.2: ¹³C NMR (125 MHz) spectrum of compound 13

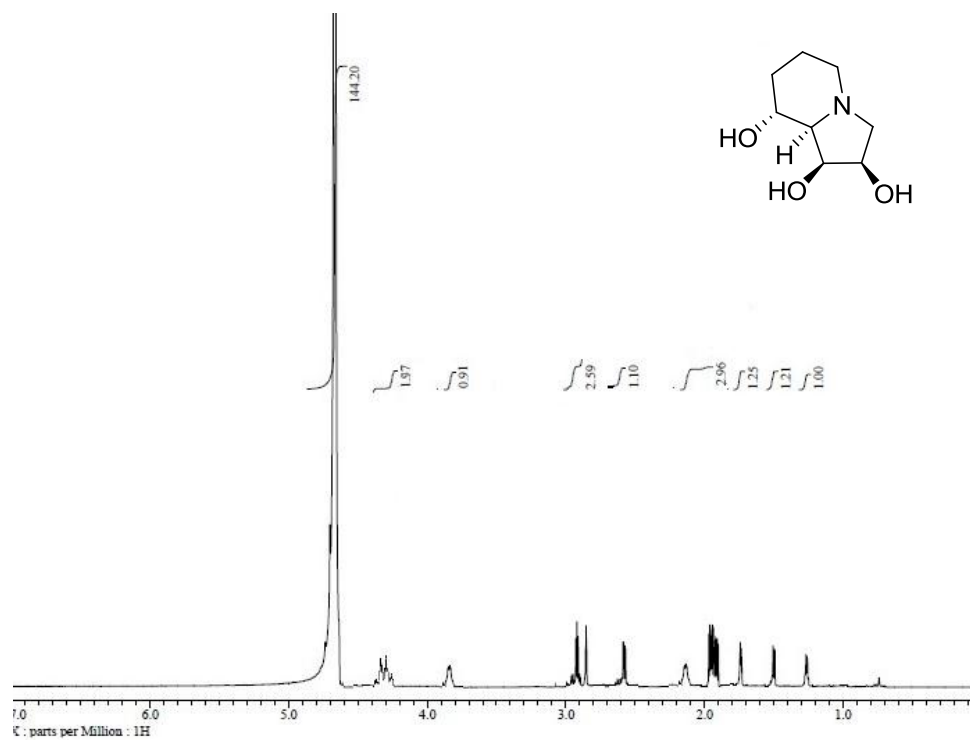


Figure 46.1: ^1H NMR (500 MHz) spectrum of compound **9**

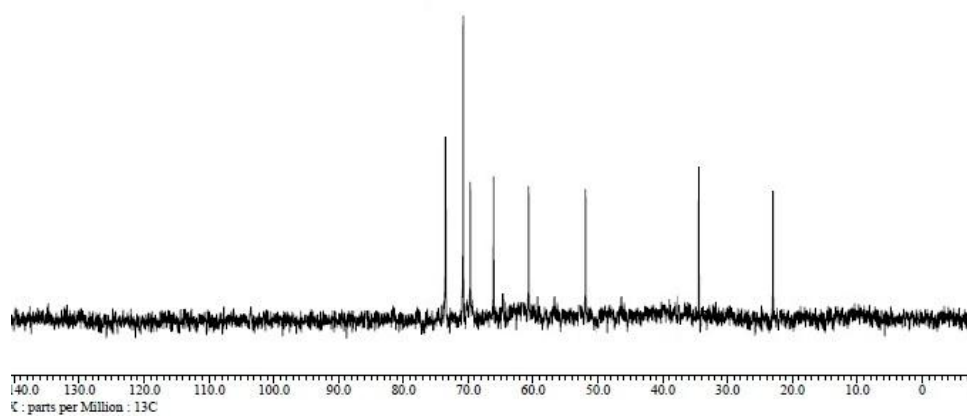


Figure 46.2: ^{13}C NMR (125 MHz) spectrum of compound **9**