

Supplementary Material

Novel directed synthesis of functionalized pyrazole derivatives *via* regioselective solvent-free thiylation of 3-alkenylpyrazoles with arenethiols

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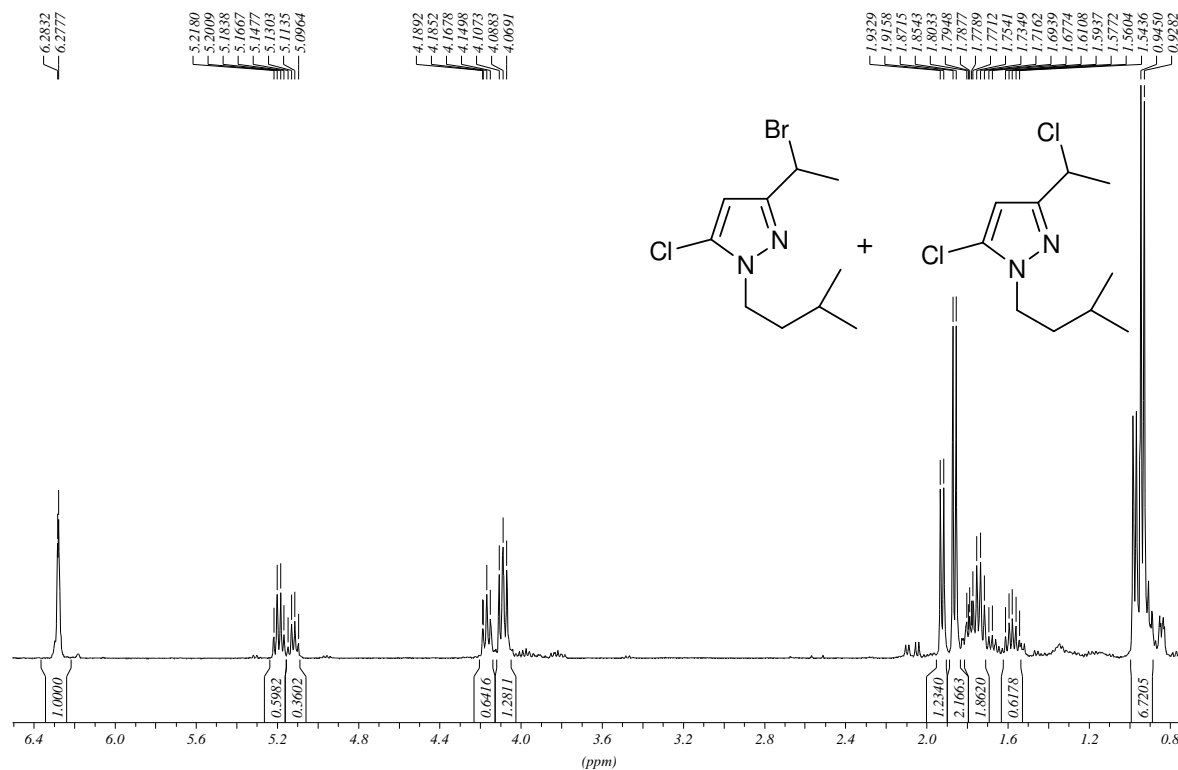
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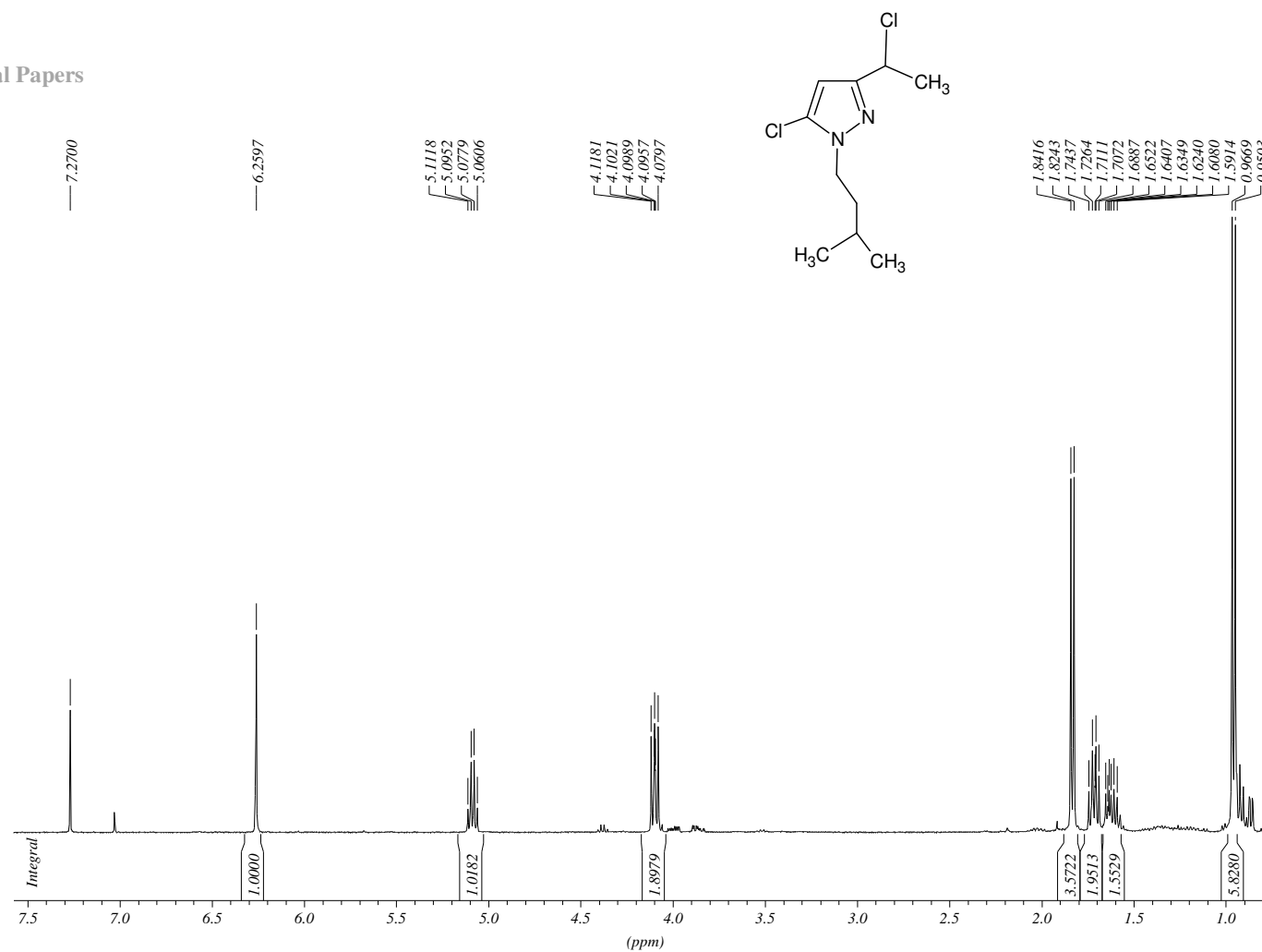
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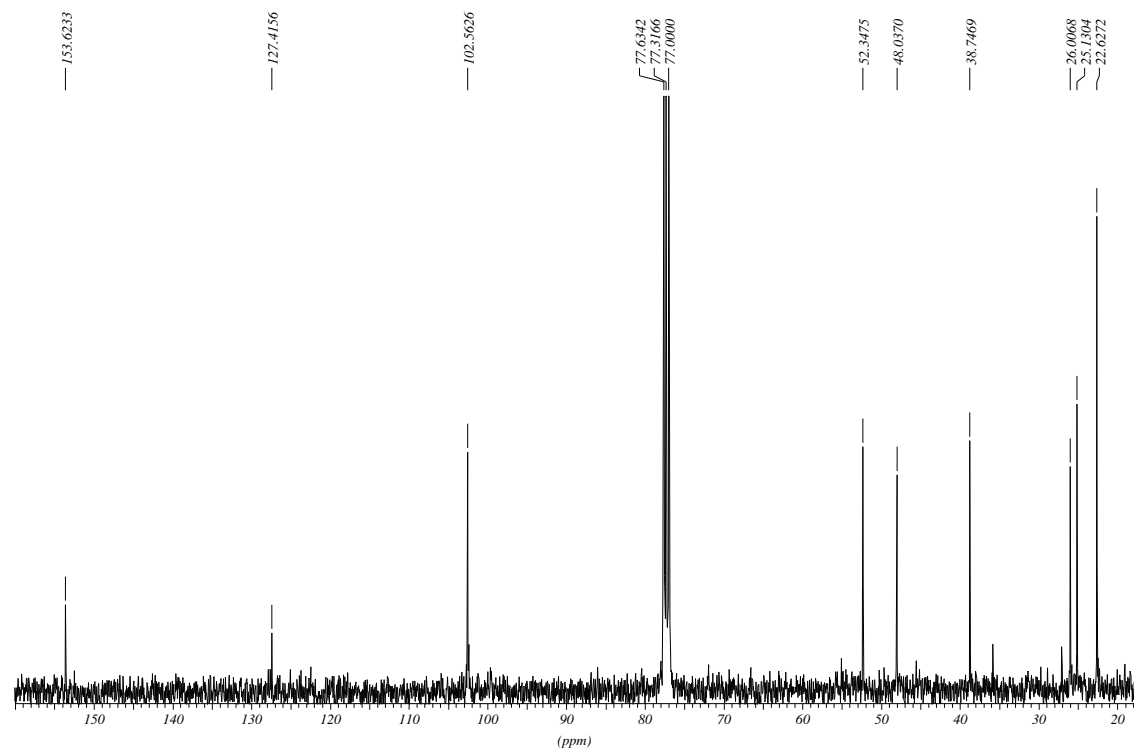
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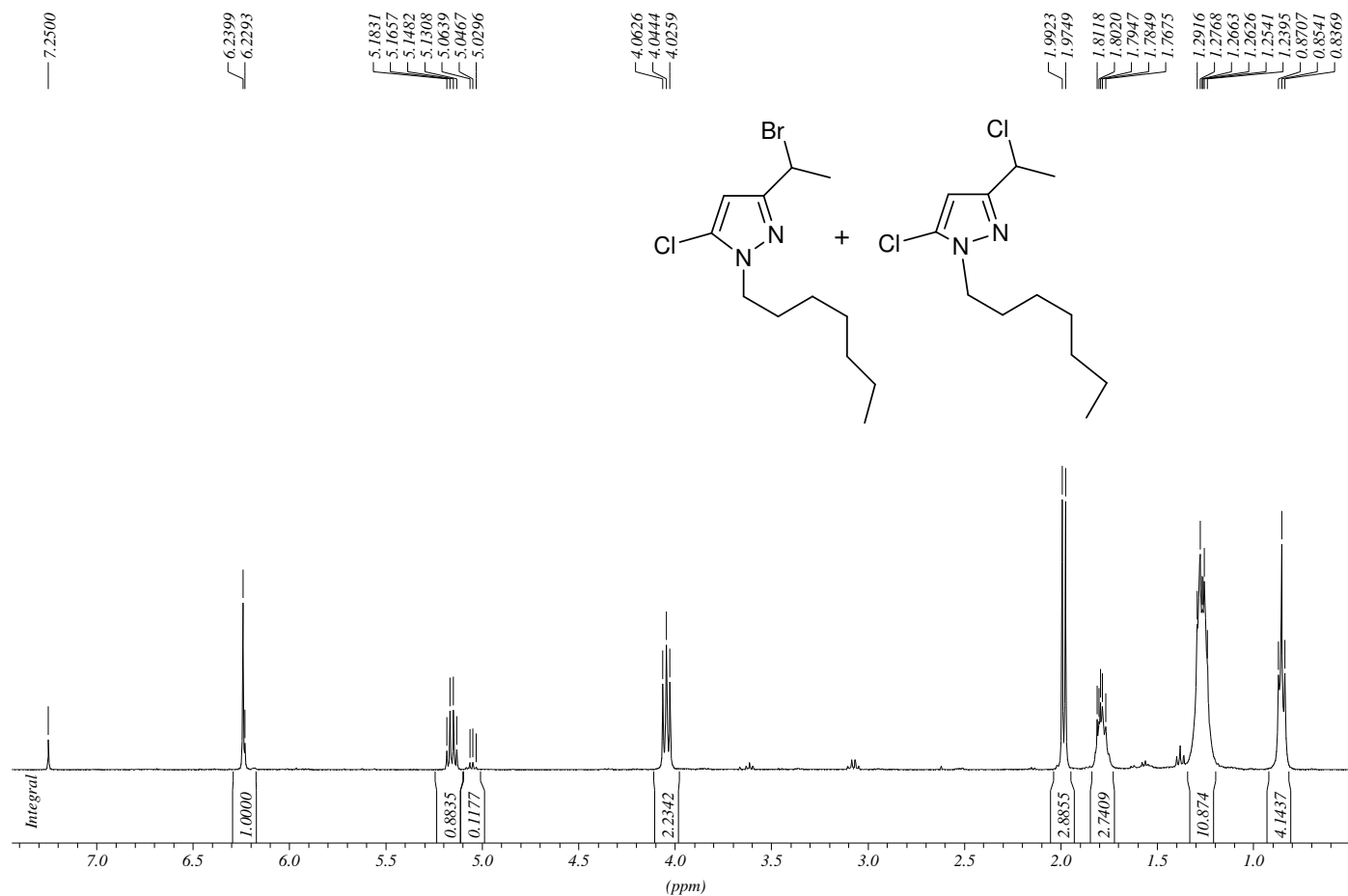




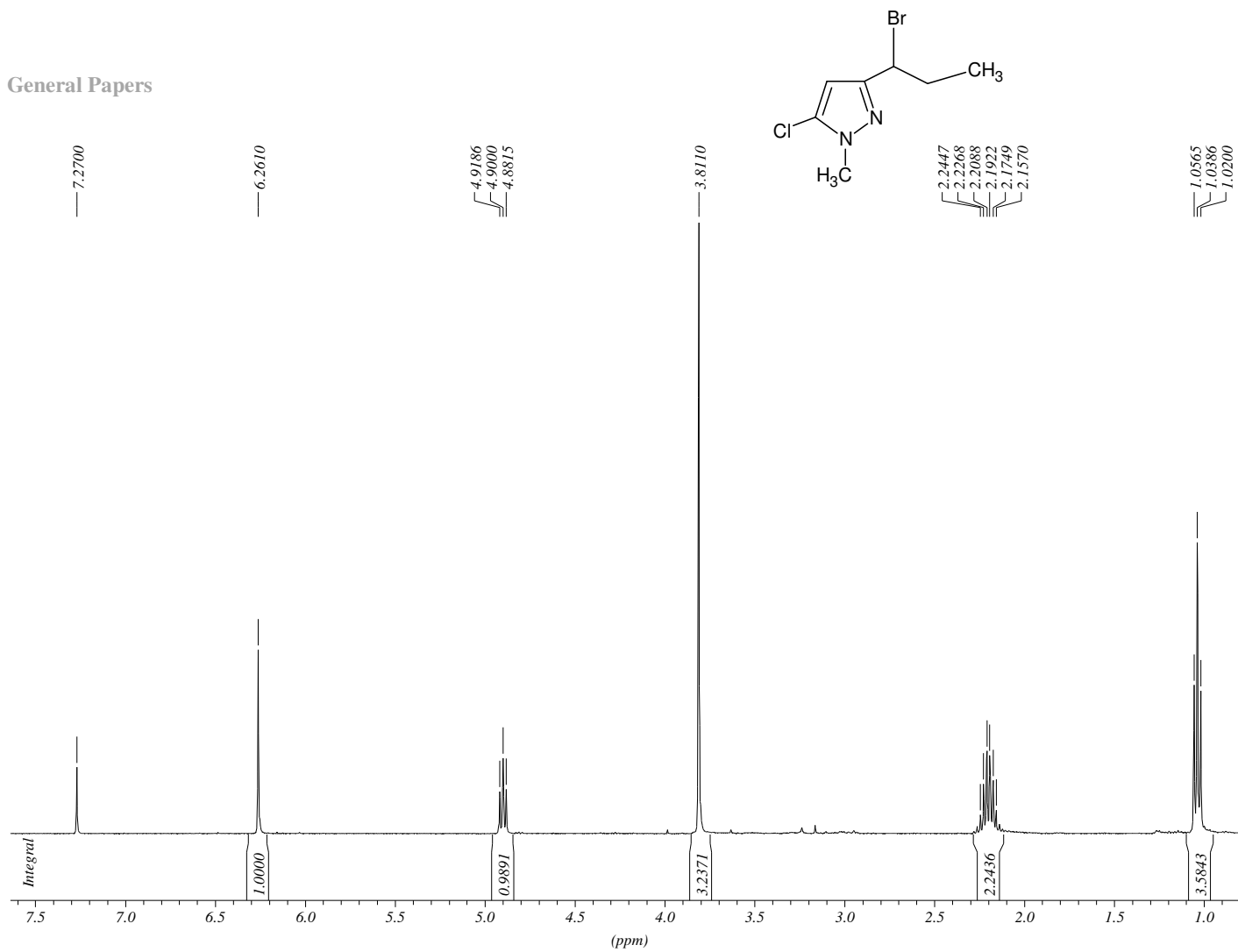
¹H NMR spectrum of **3f** (CDCl₃)



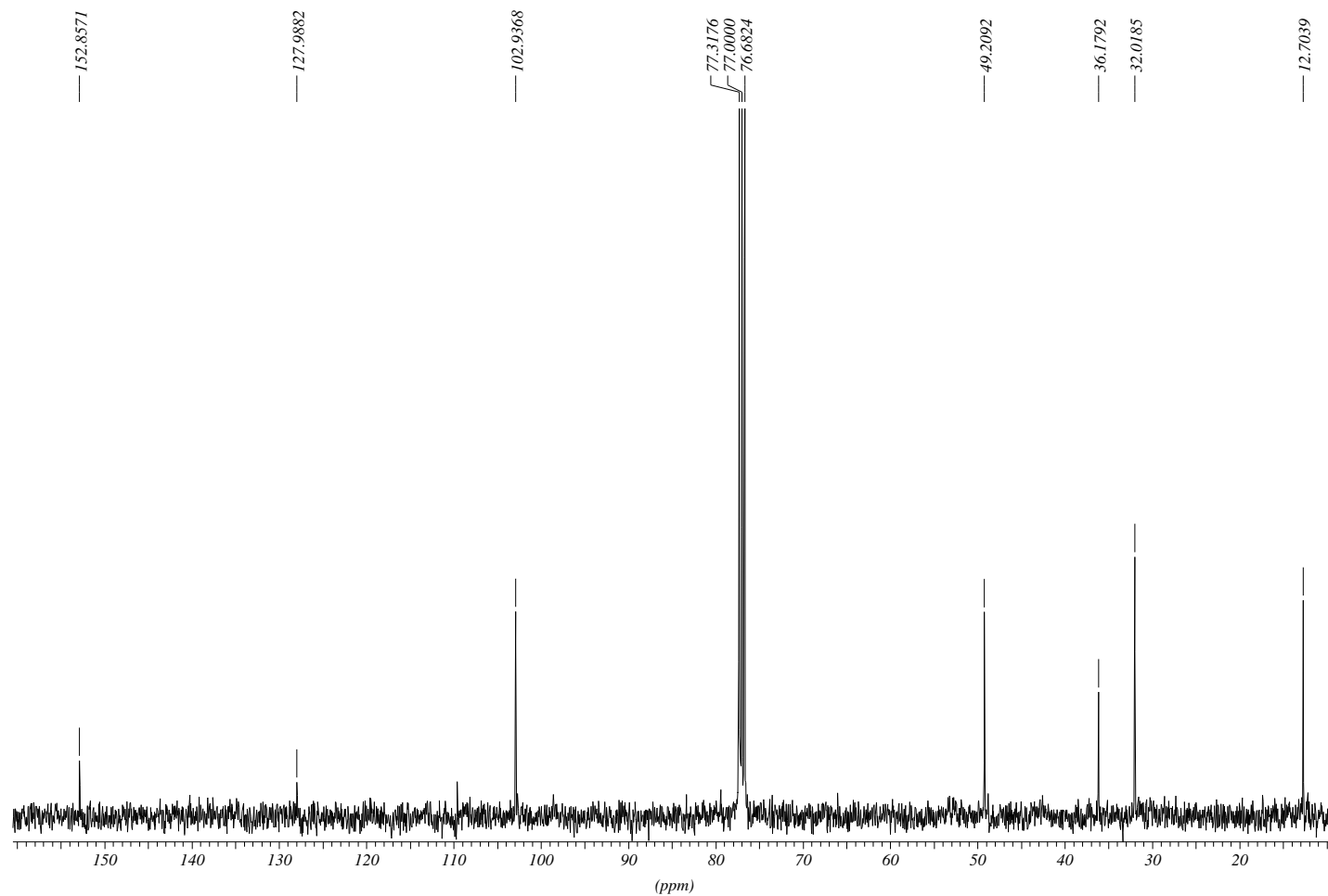
^{13}C NMR spectrum of **3f** (CDCl_3)



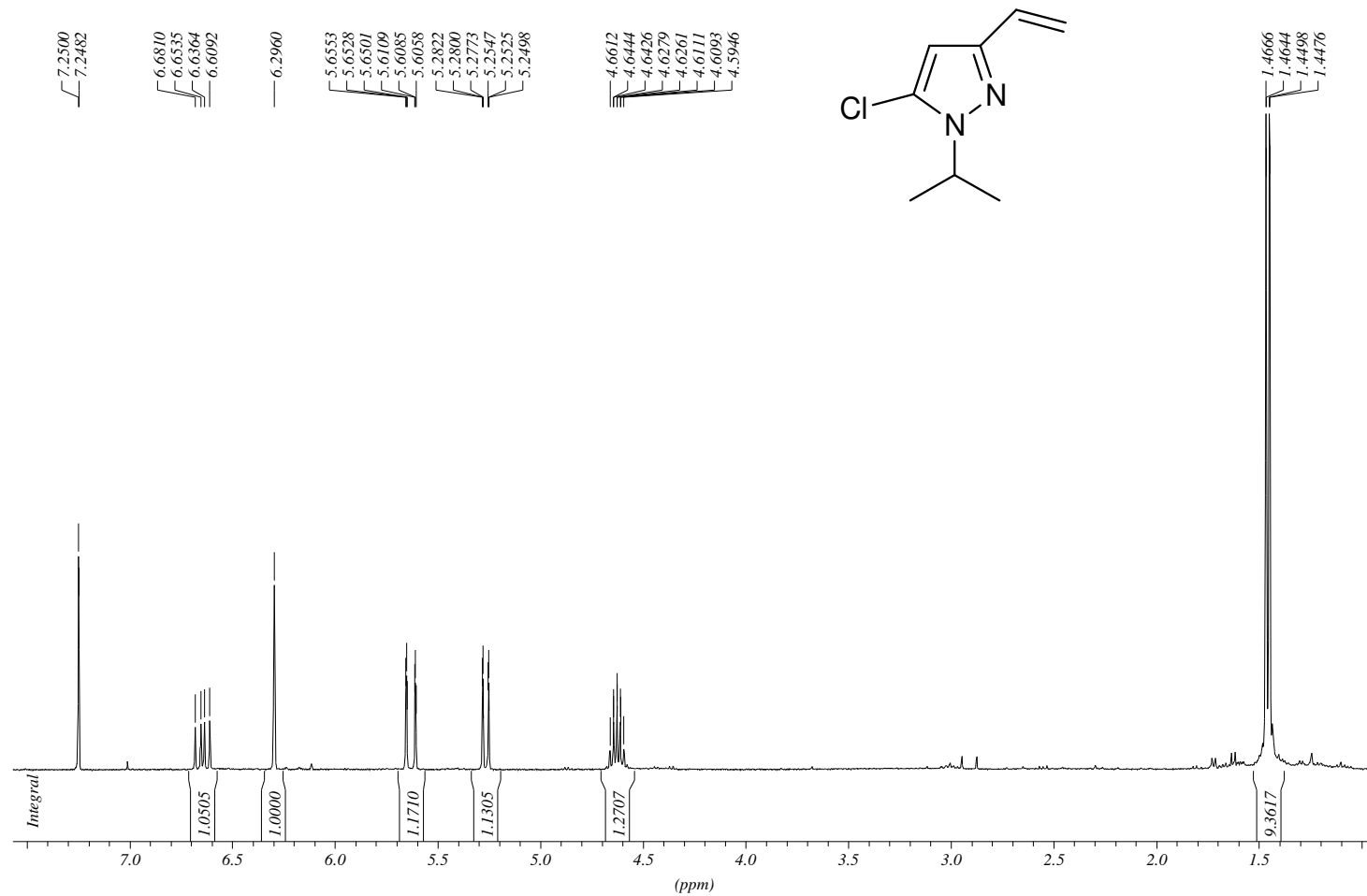
¹H NMR spectrum of **3g** + **3h** (CDCl₃)



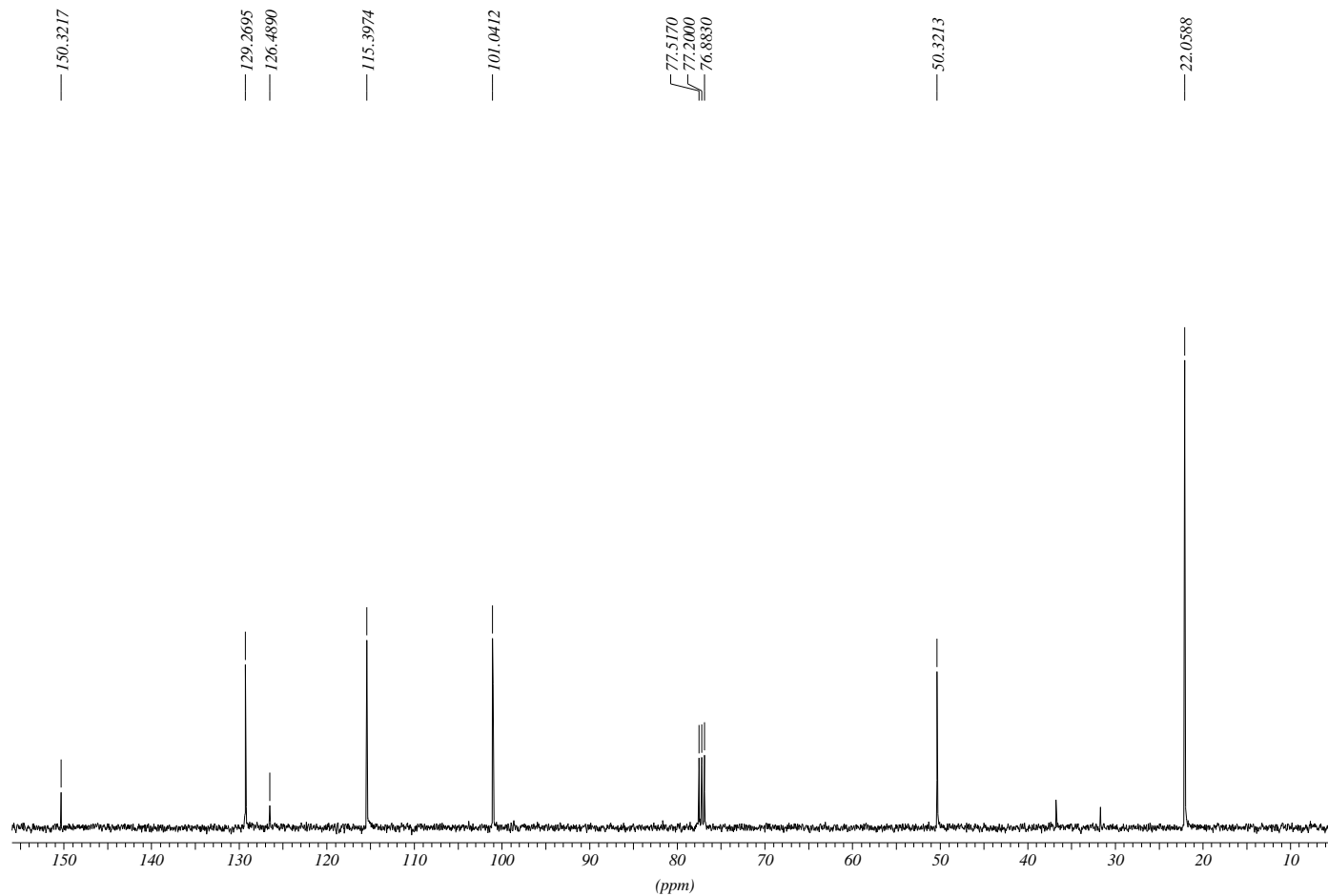
¹H NMR spectrum of **3j** (CDCl₃)



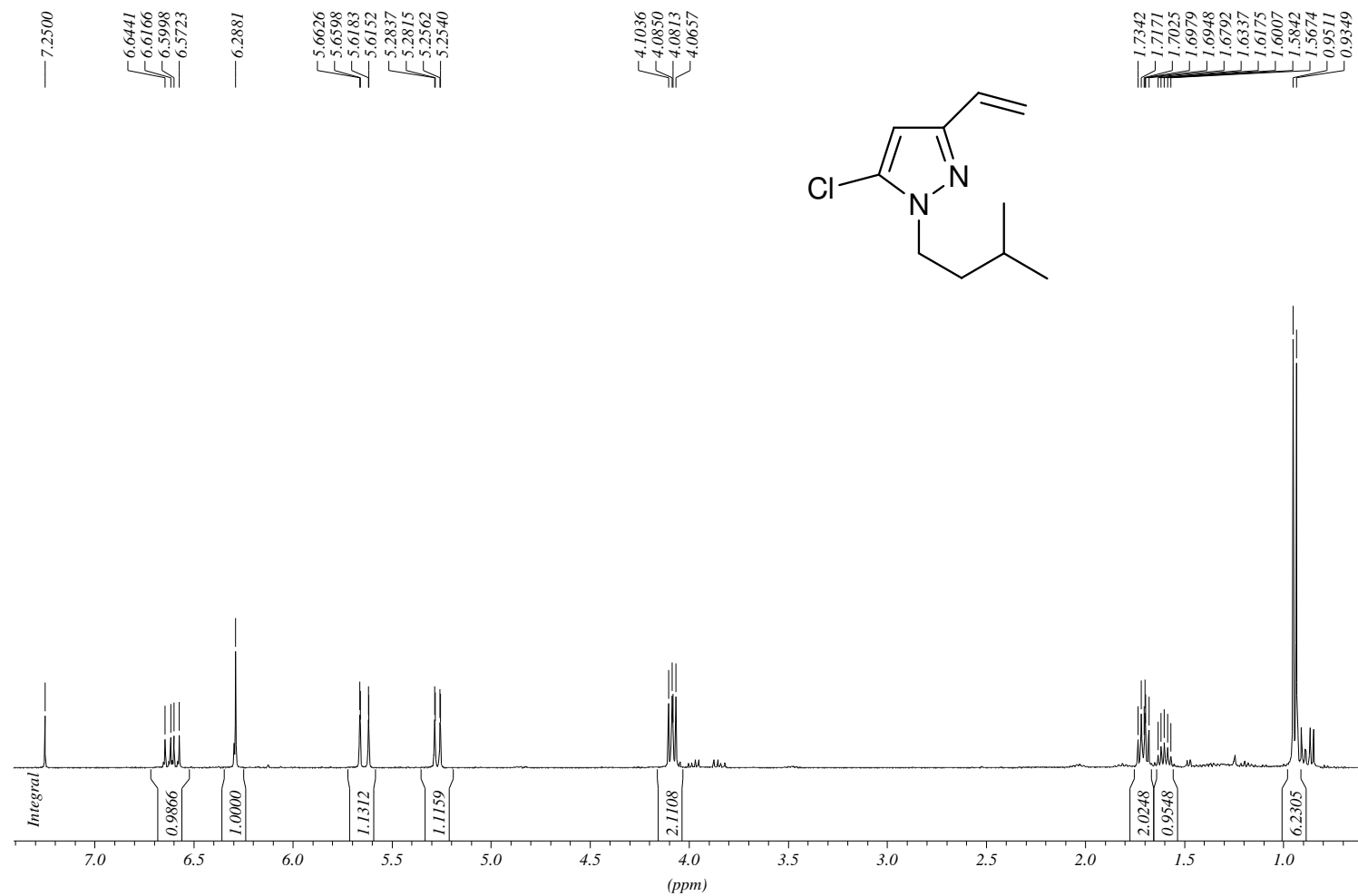
^{13}C NMR spectrum of **3j** (CDCl_3)



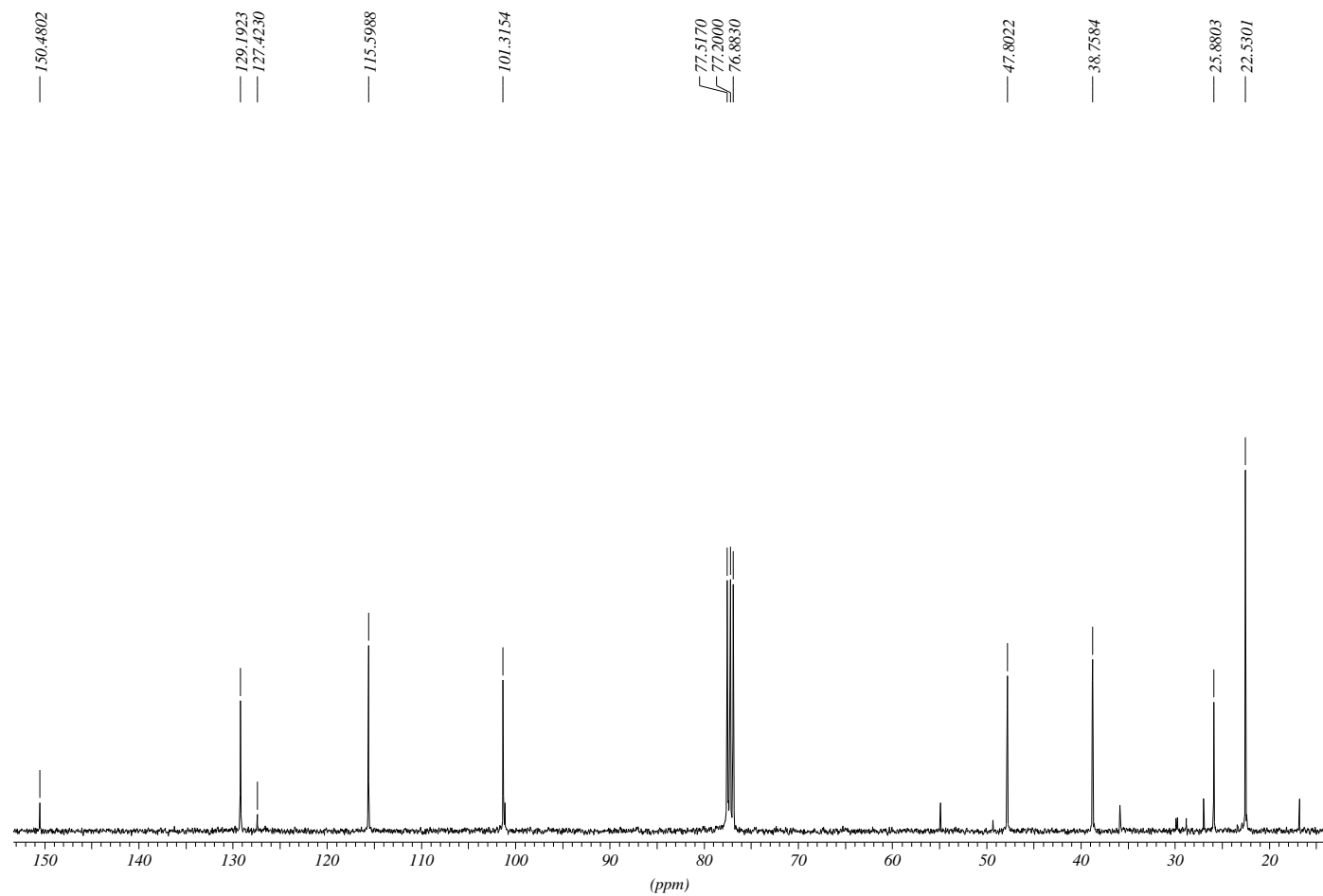
¹H NMR spectrum of **4c** (CDCl₃)



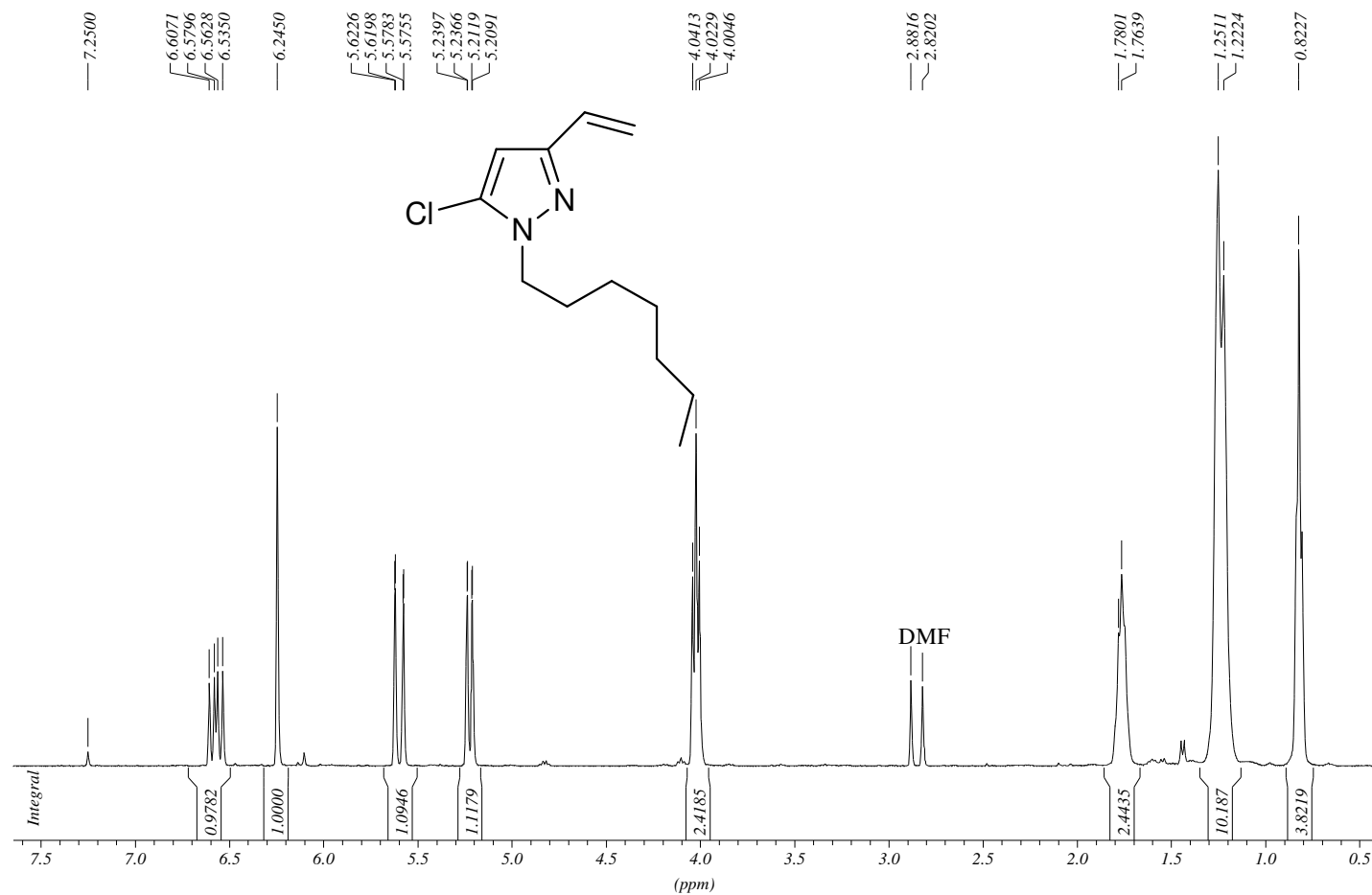
¹³C NMR spectrum of **4c** (CDCl₃)



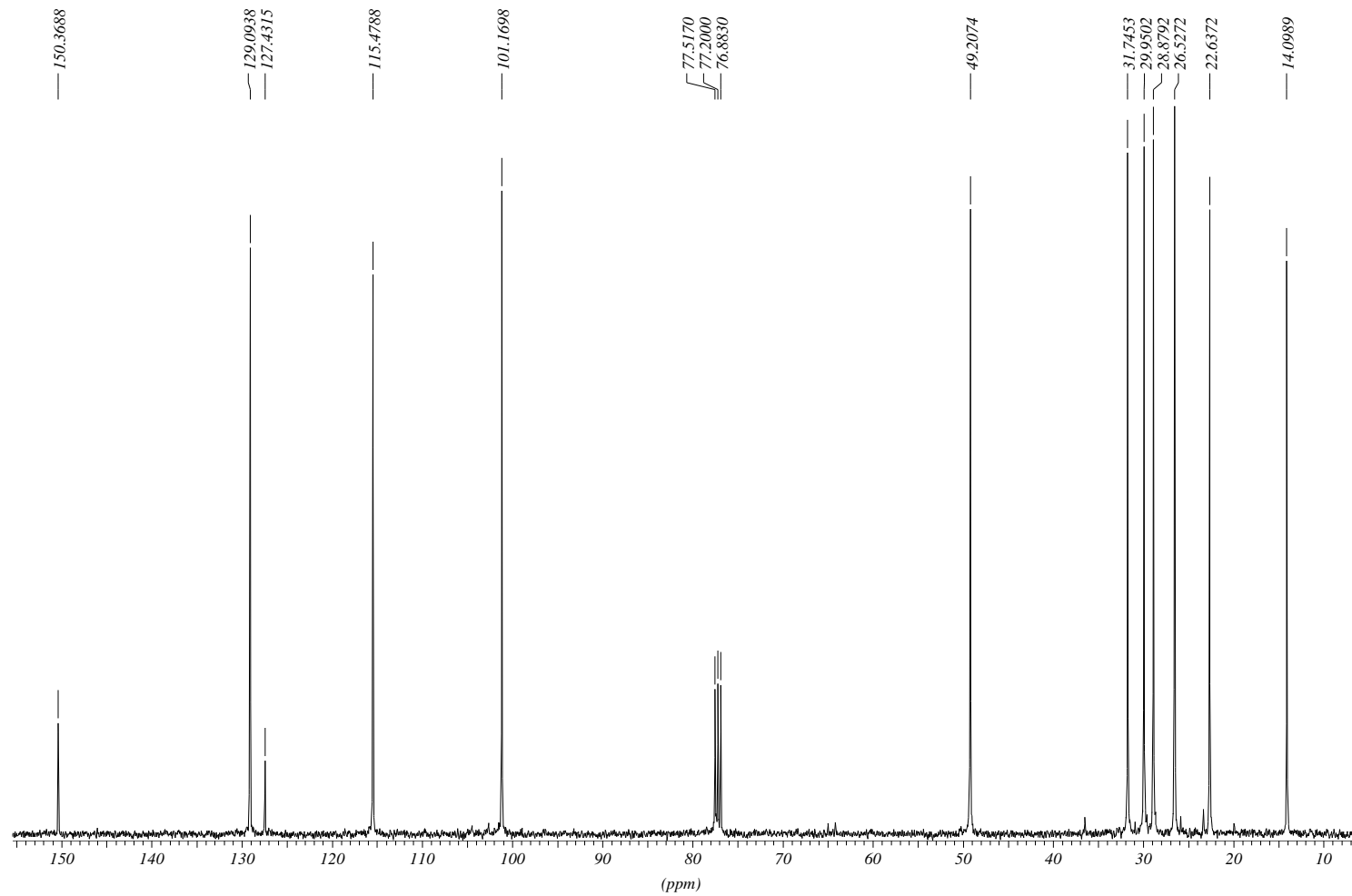
¹H NMR spectrum of **4d** (CDCl₃)

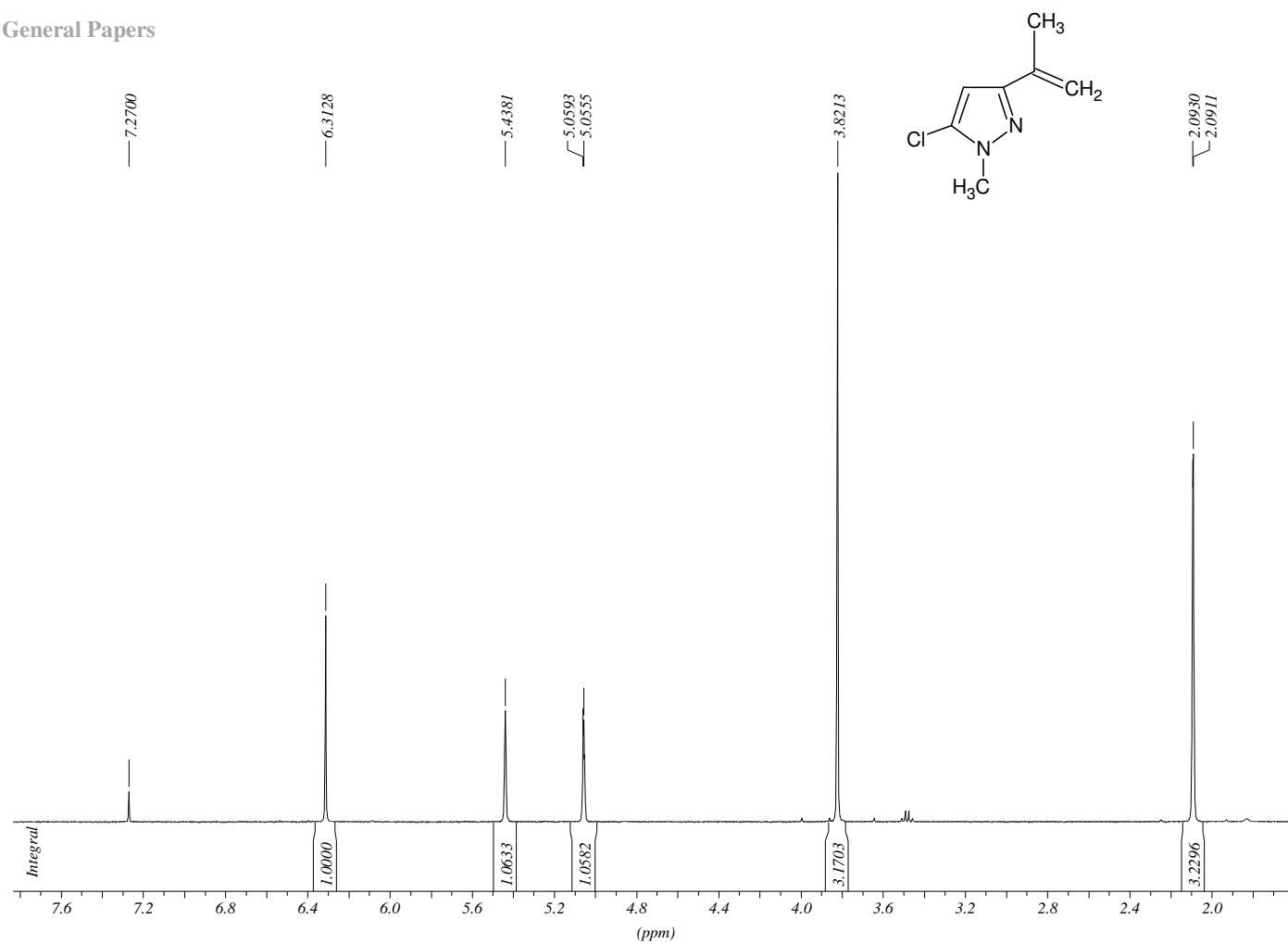


¹³C NMR spectrum of **4d** (CDCl₃)

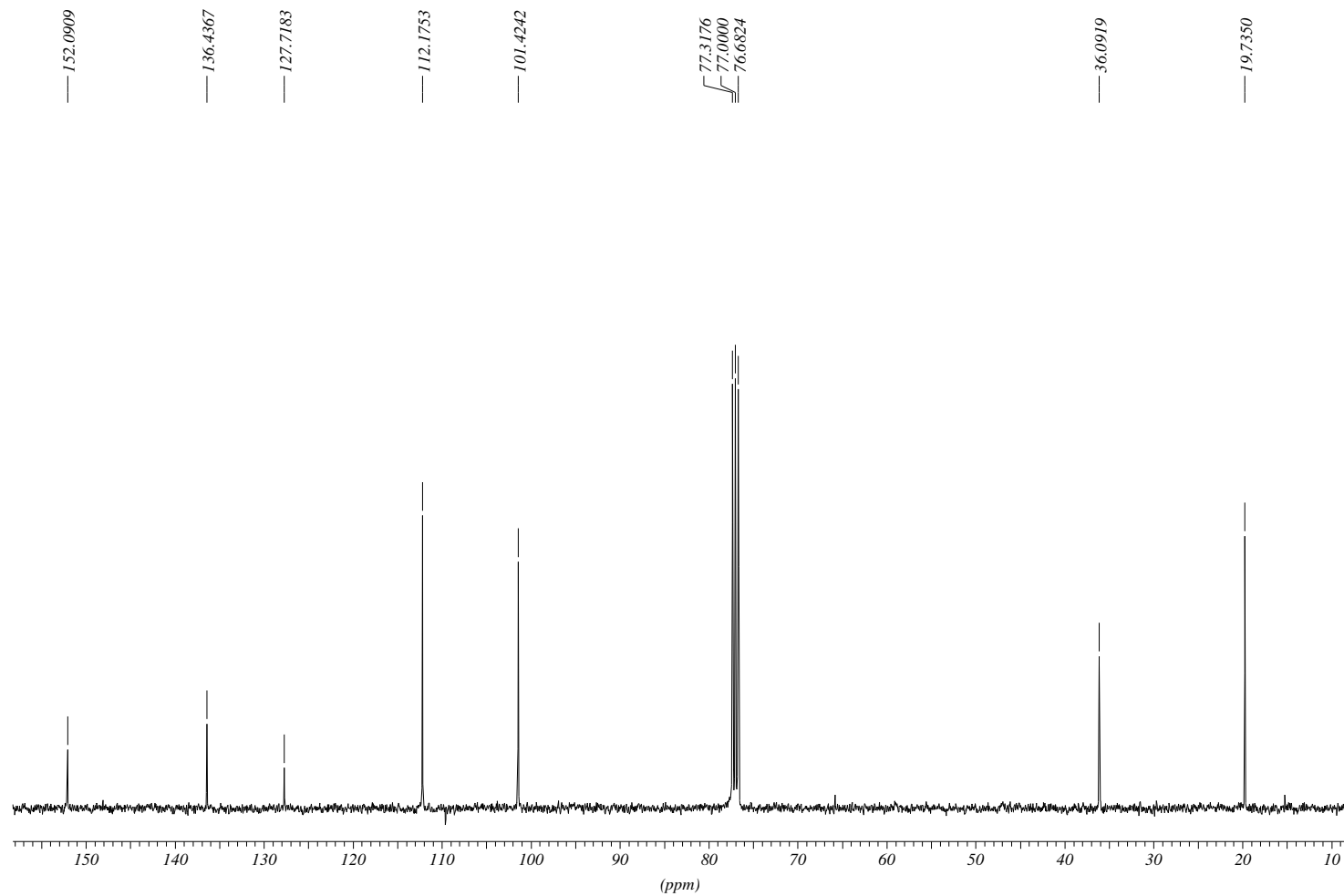


¹H NMR spectrum of **4e** (CDCl₃)

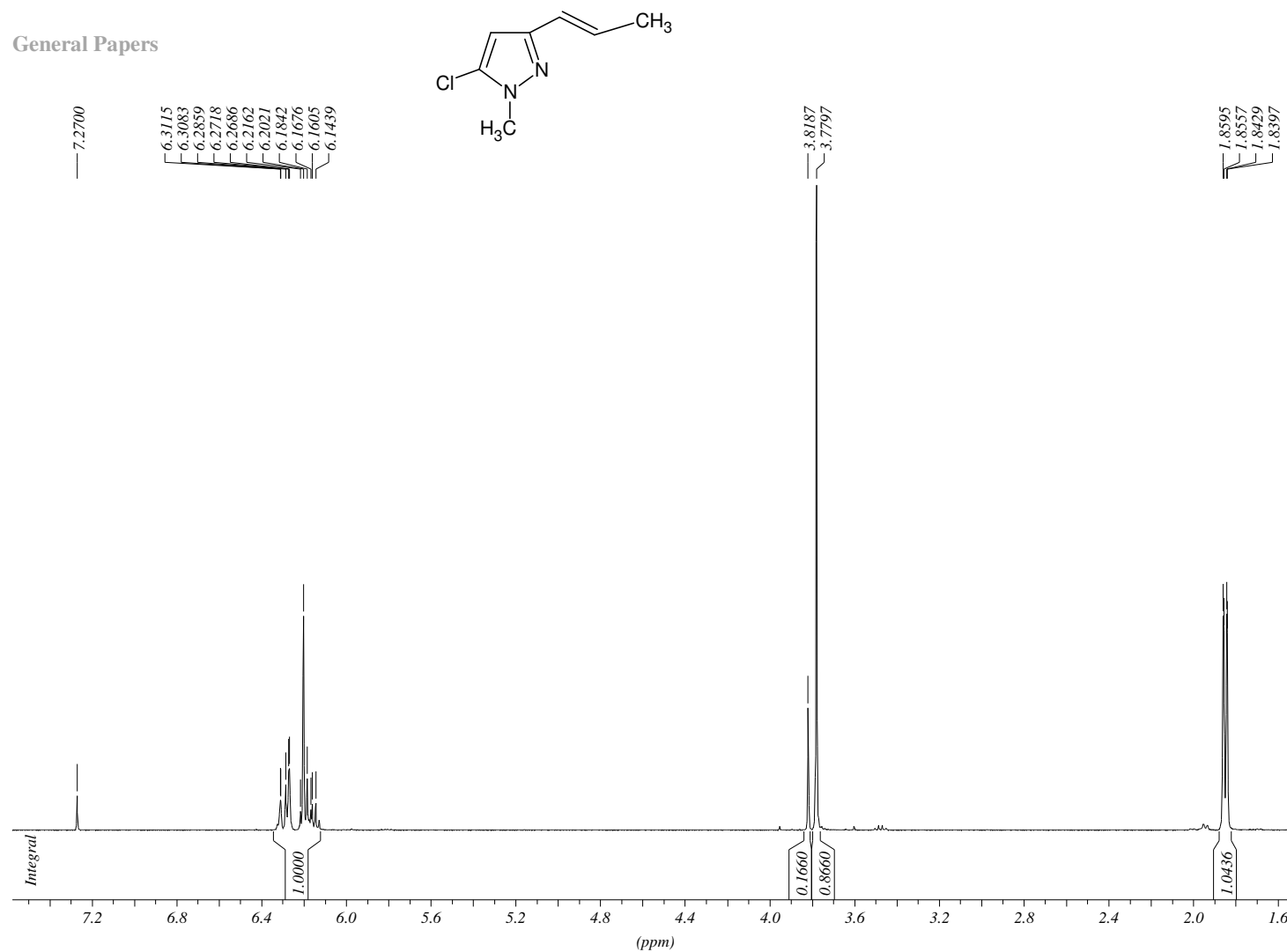
 ^{13}C NMR spectrum of **4e** (CDCl_3)

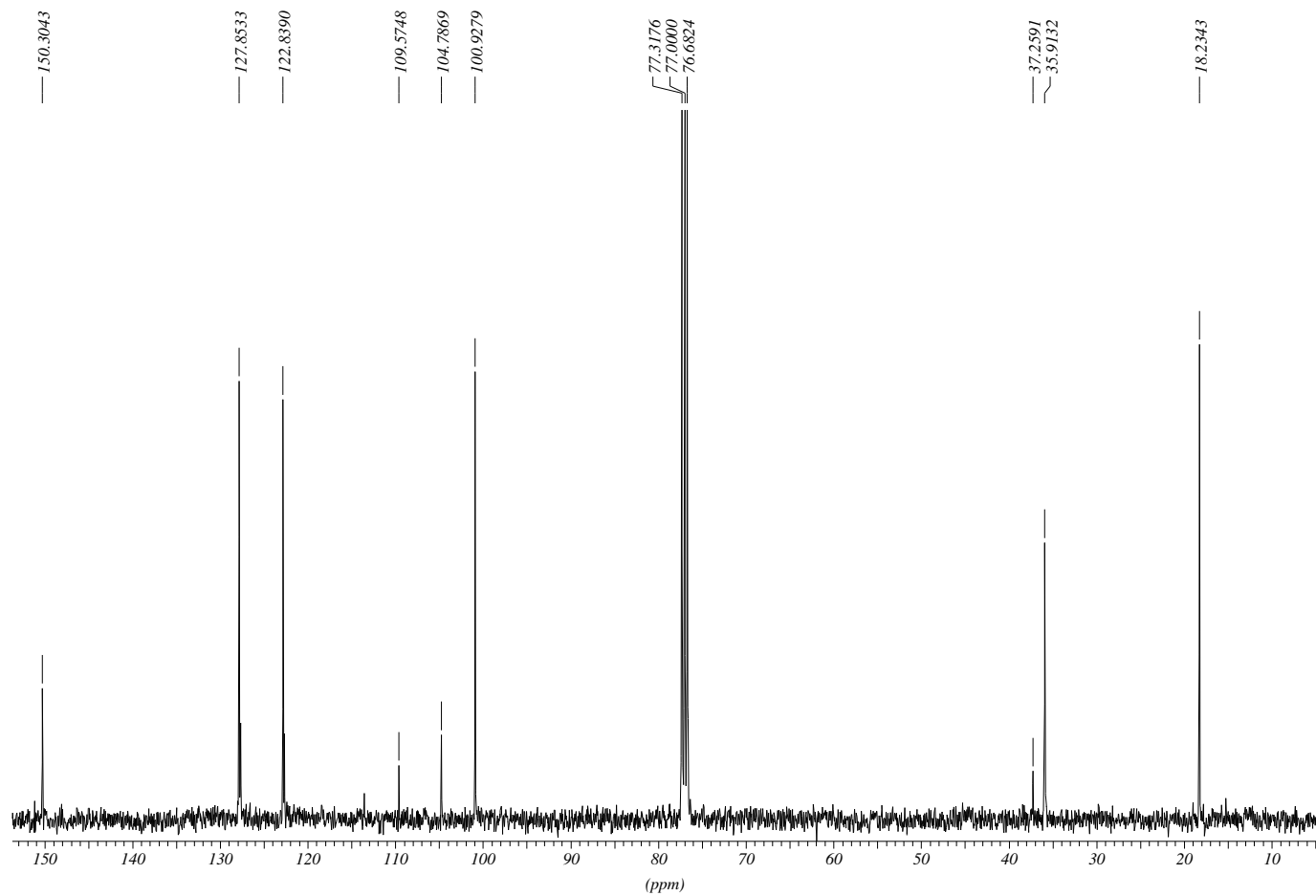


¹H NMR spectrum of **4f** (CDCl₃)

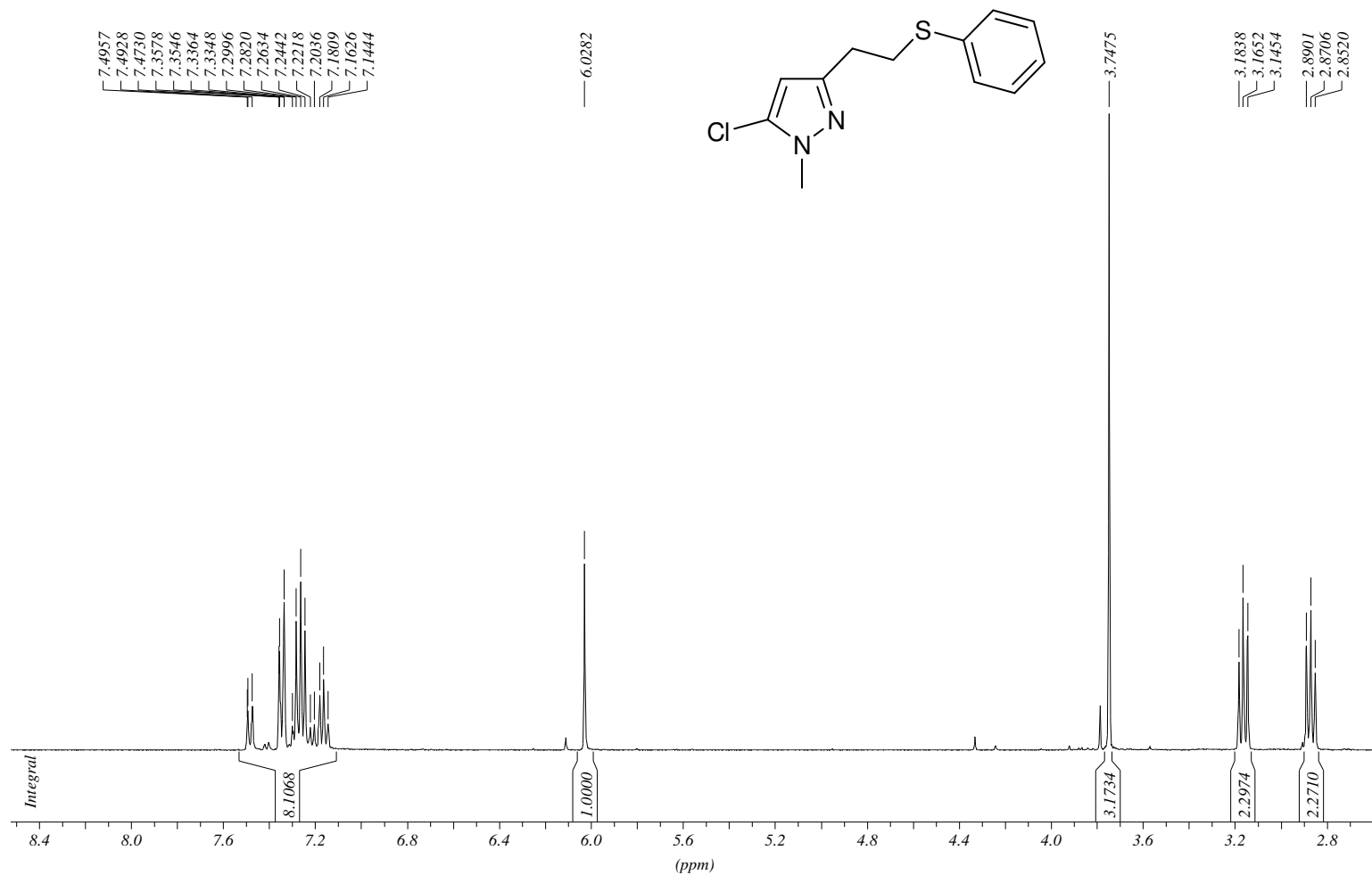


¹³C NMR spectrum of **4f** (CDCl₃)

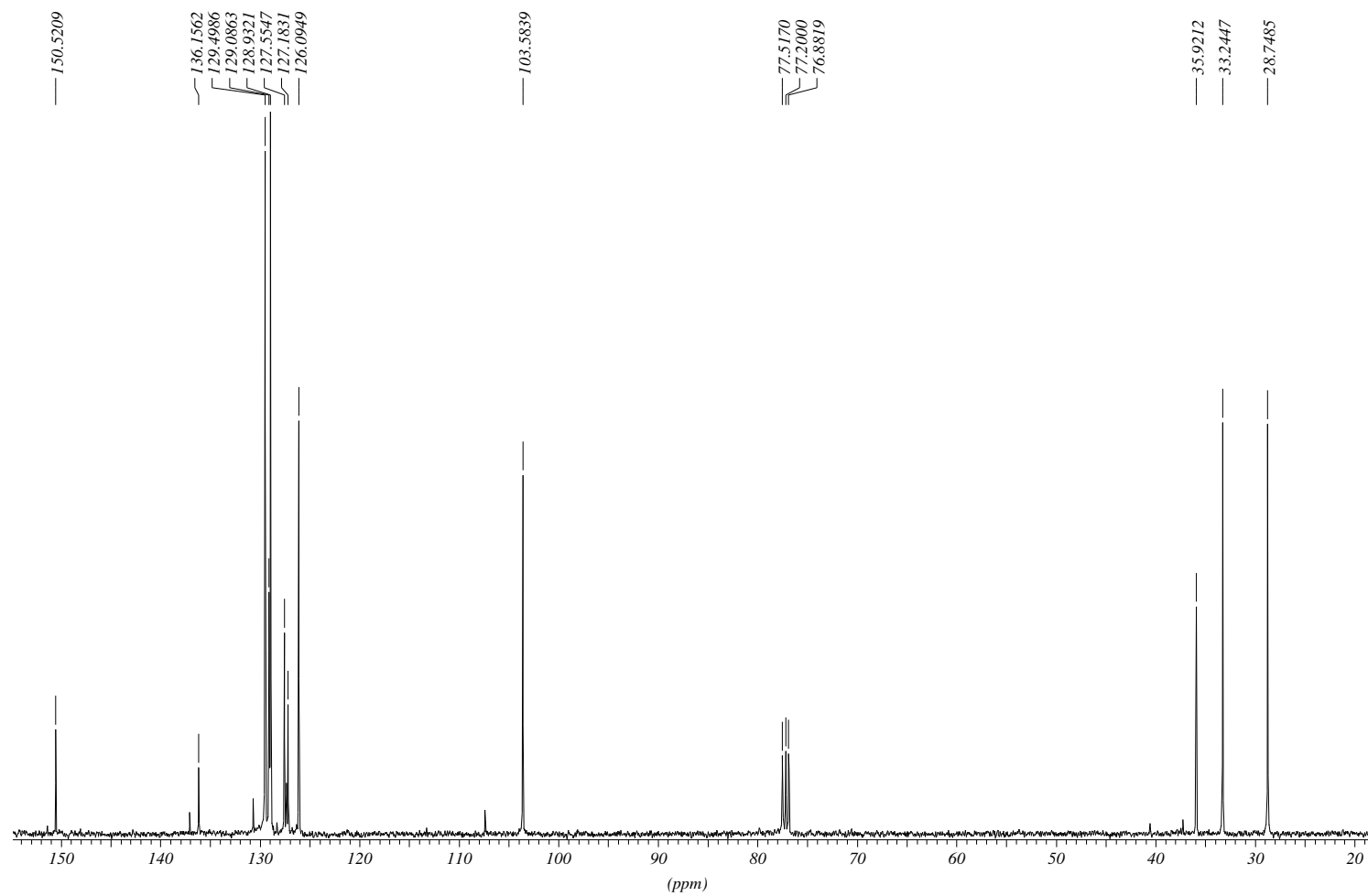
 ^1H NMR spectrum of **4g** (CDCl₃)



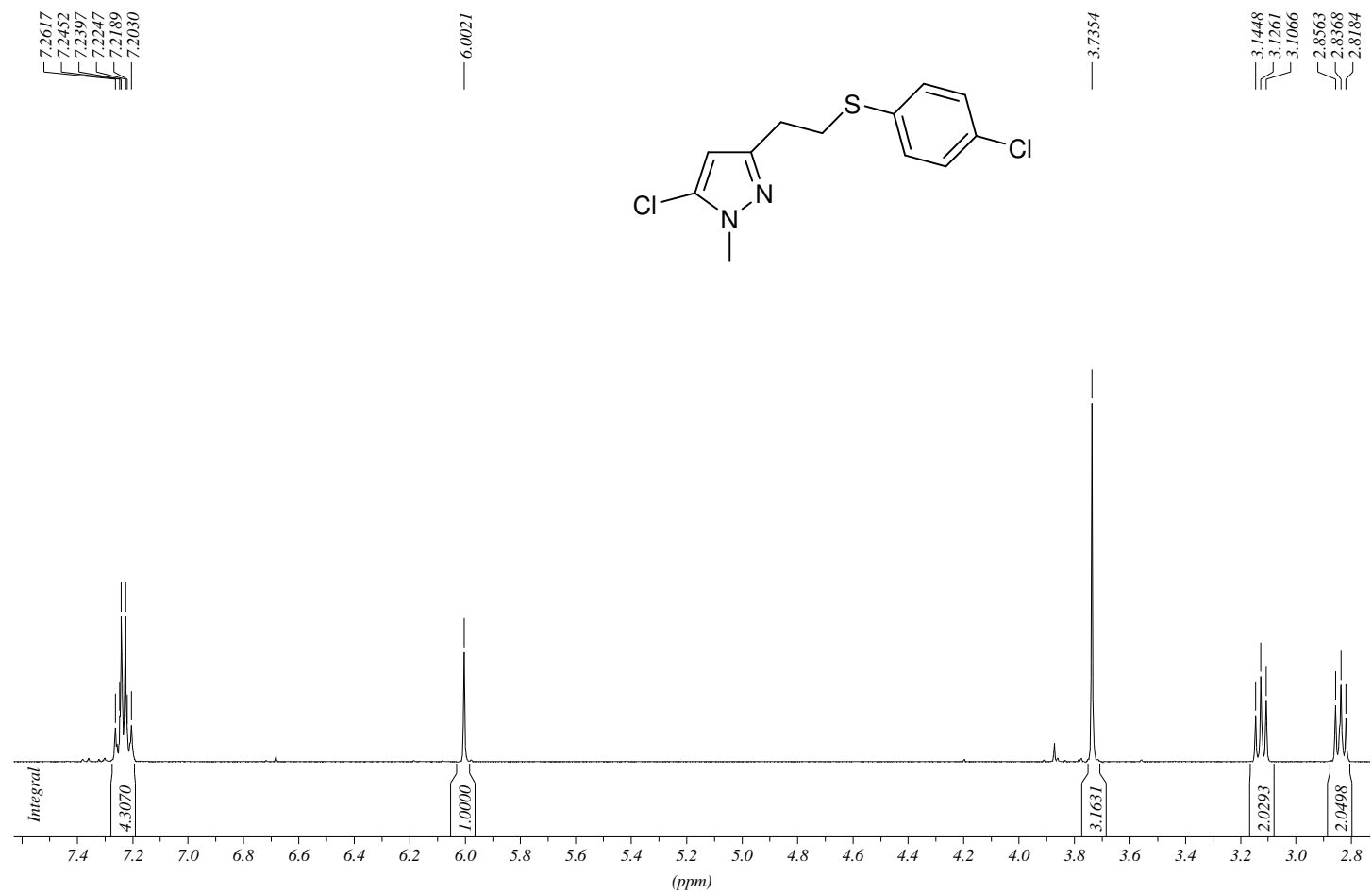
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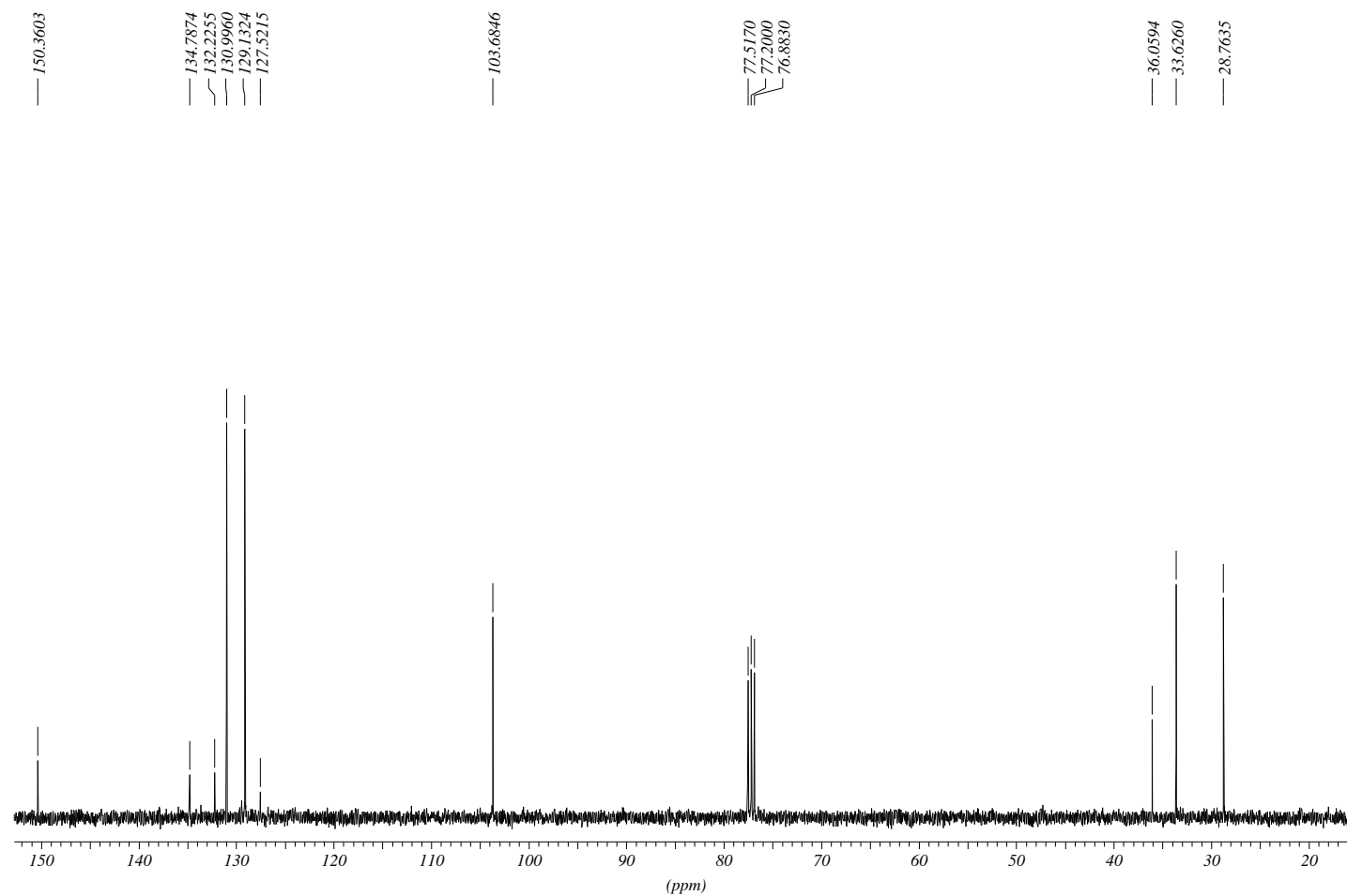
¹H NMR spectrum of **6aa** (CDCl₃)



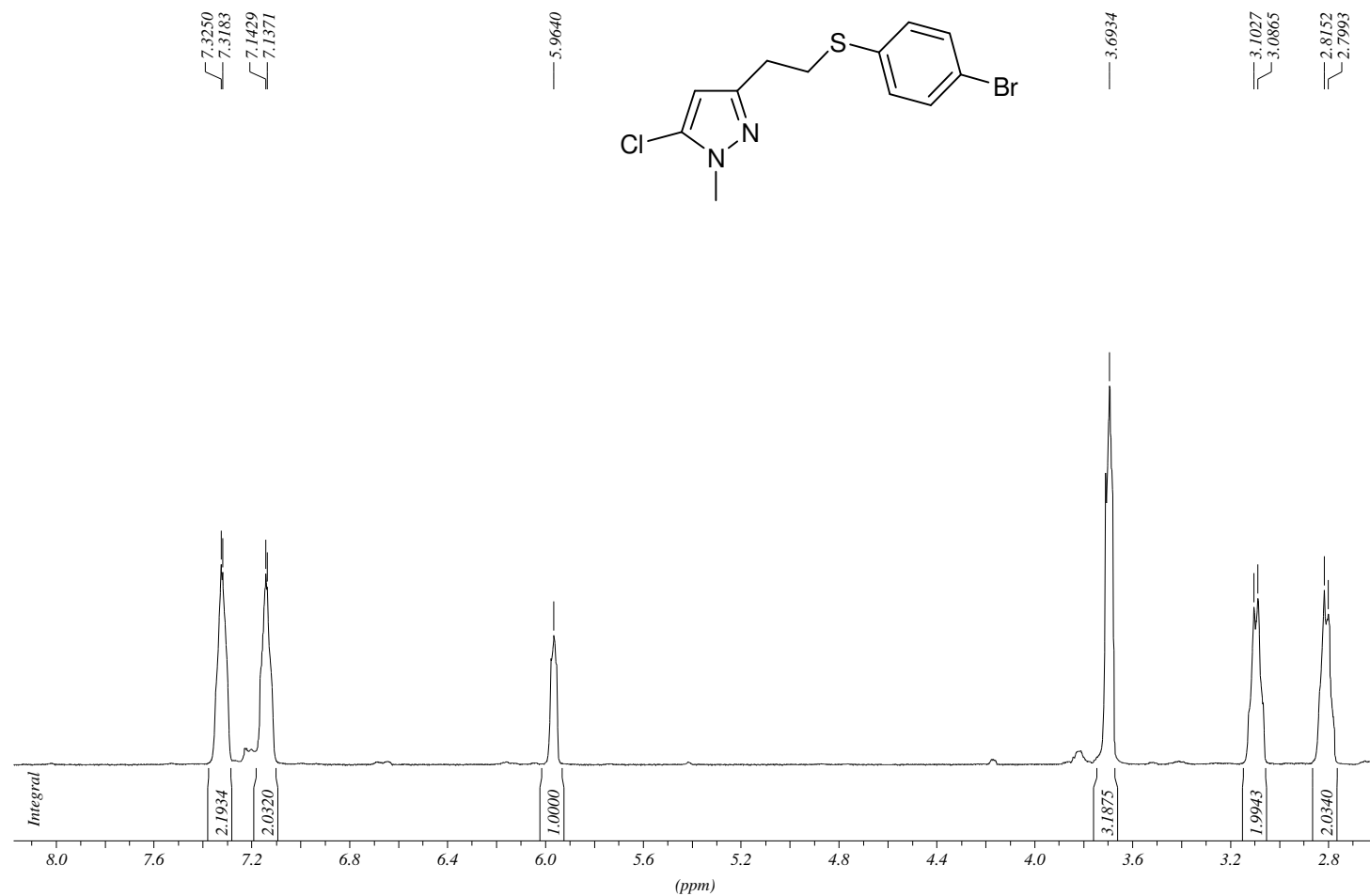
¹³C NMR spectrum of **6aa** (CDCl₃)

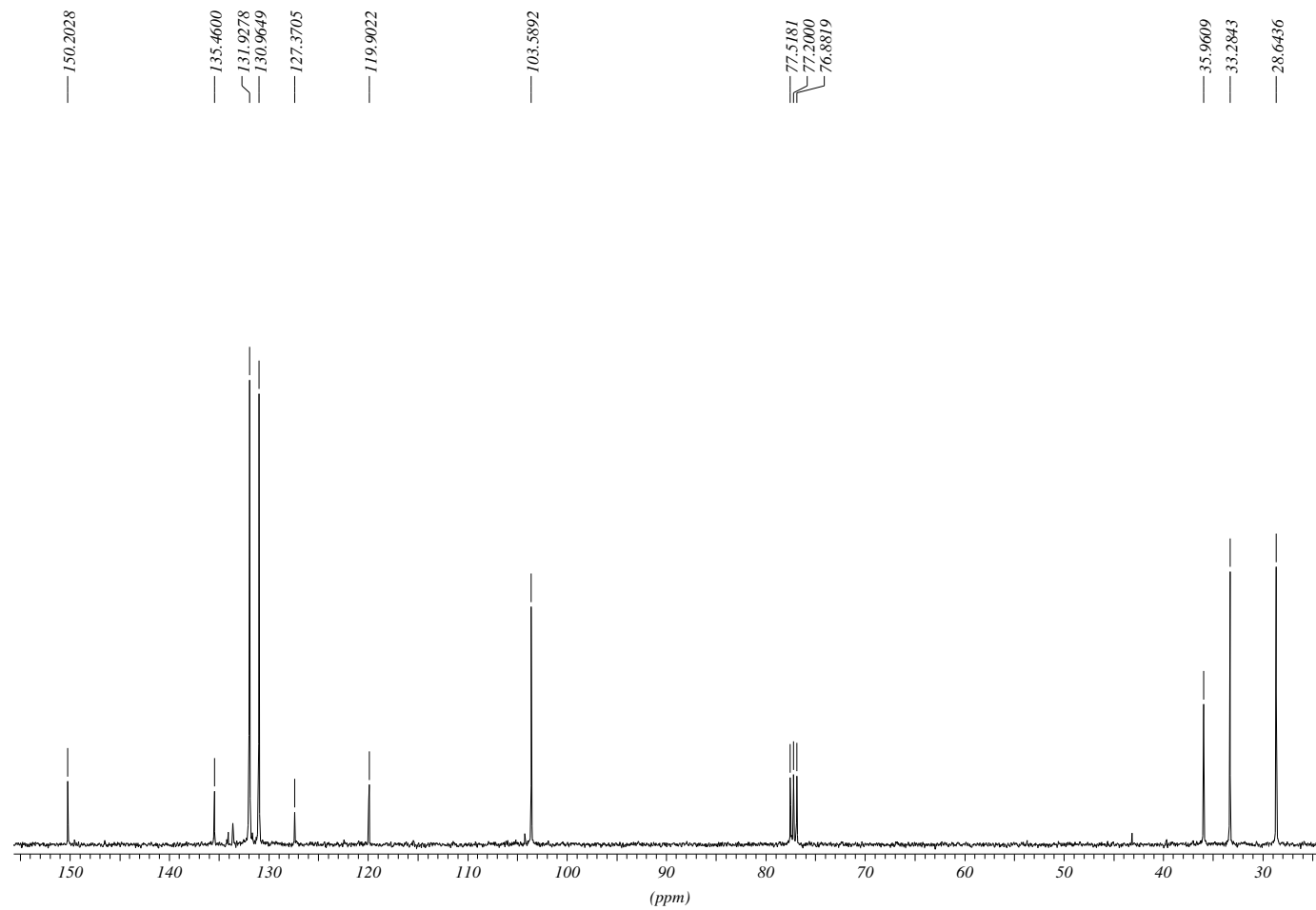


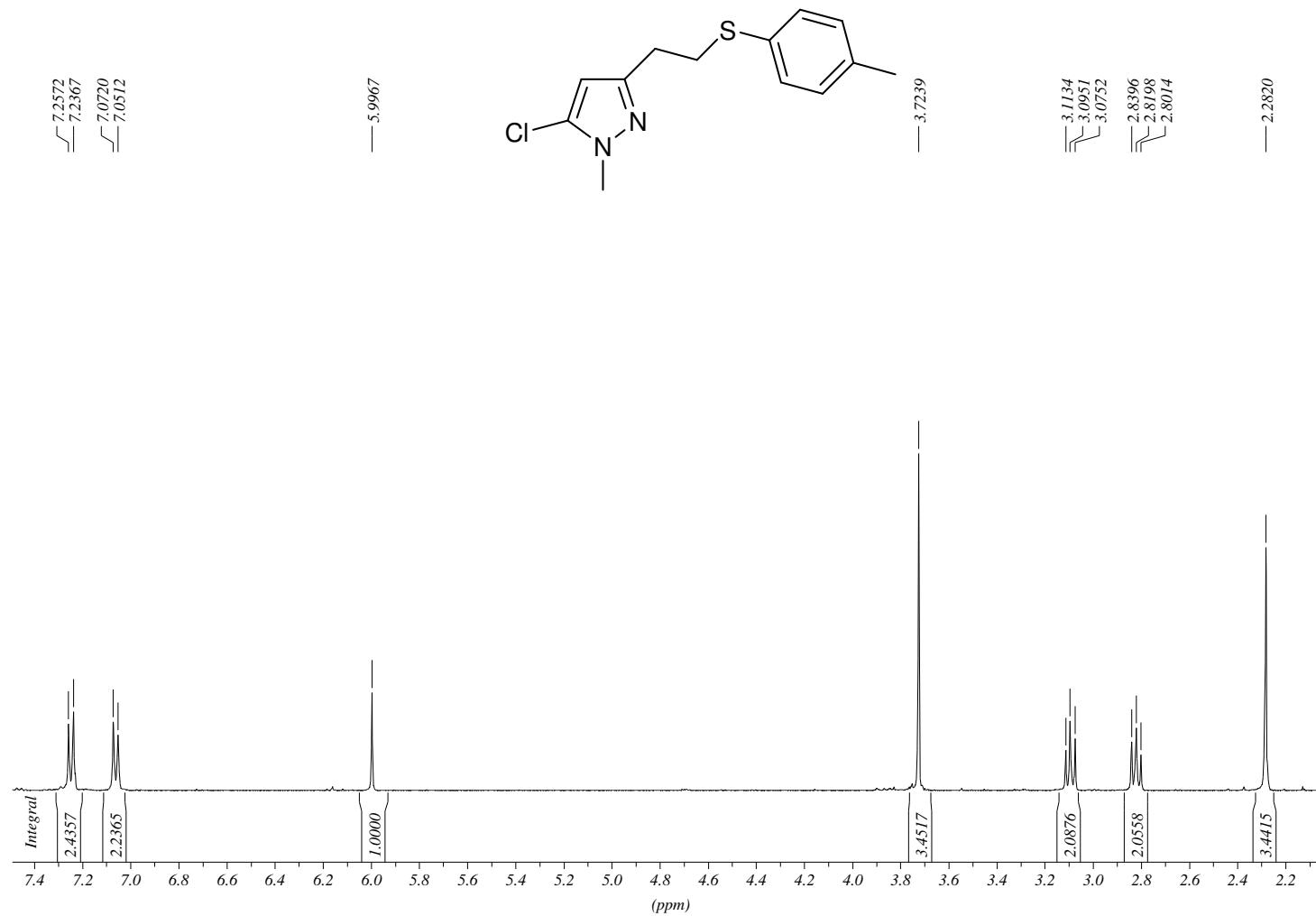
¹H NMR spectrum of **6ab** (CDCl₃)

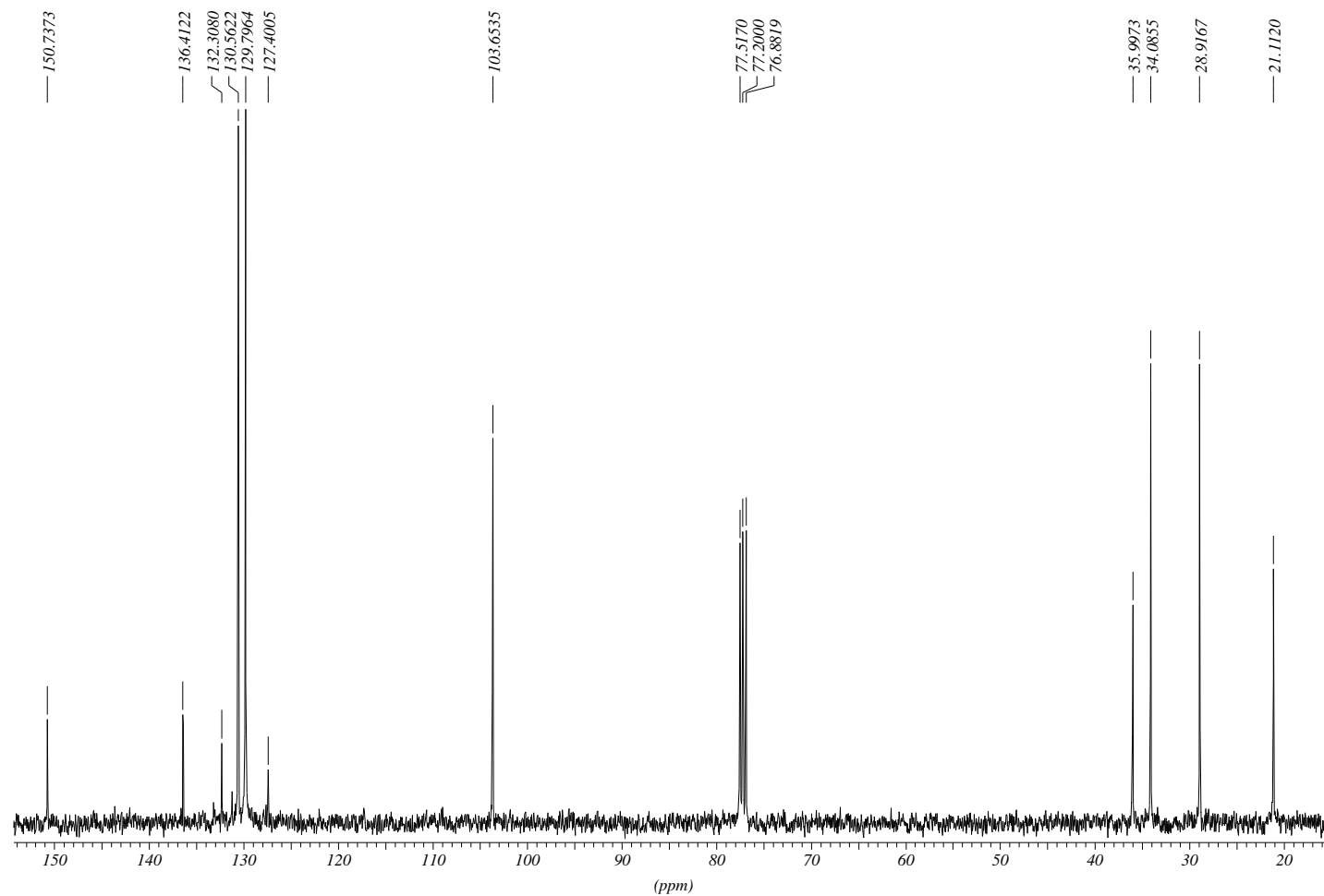


¹³C NMR spectrum of **6ab** (CDCl₃)

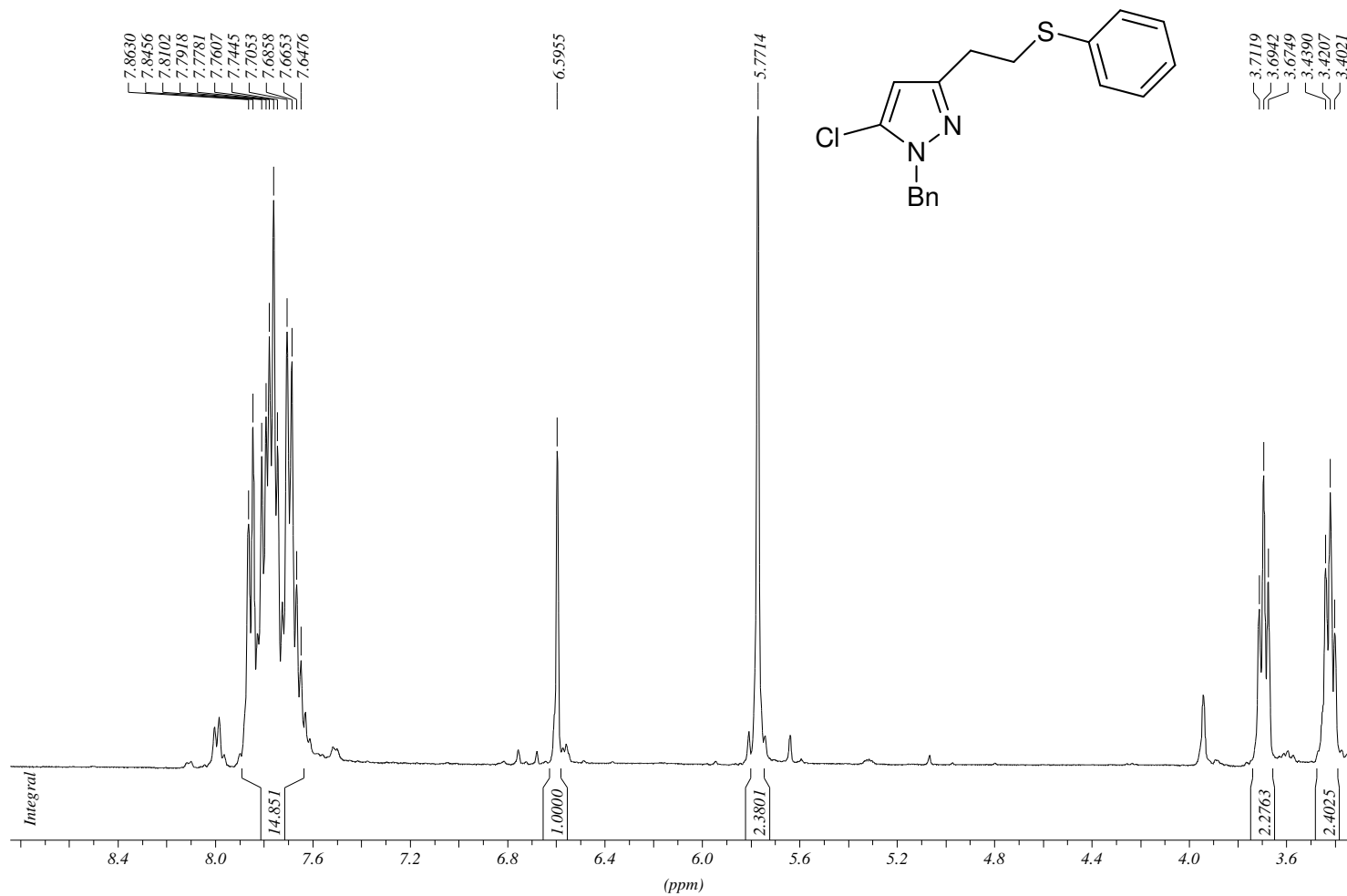
 ^1H NMR spectrum of **6ac** (CDCl₃)

¹³C NMR spectrum of **6ac** (CDCl₃)

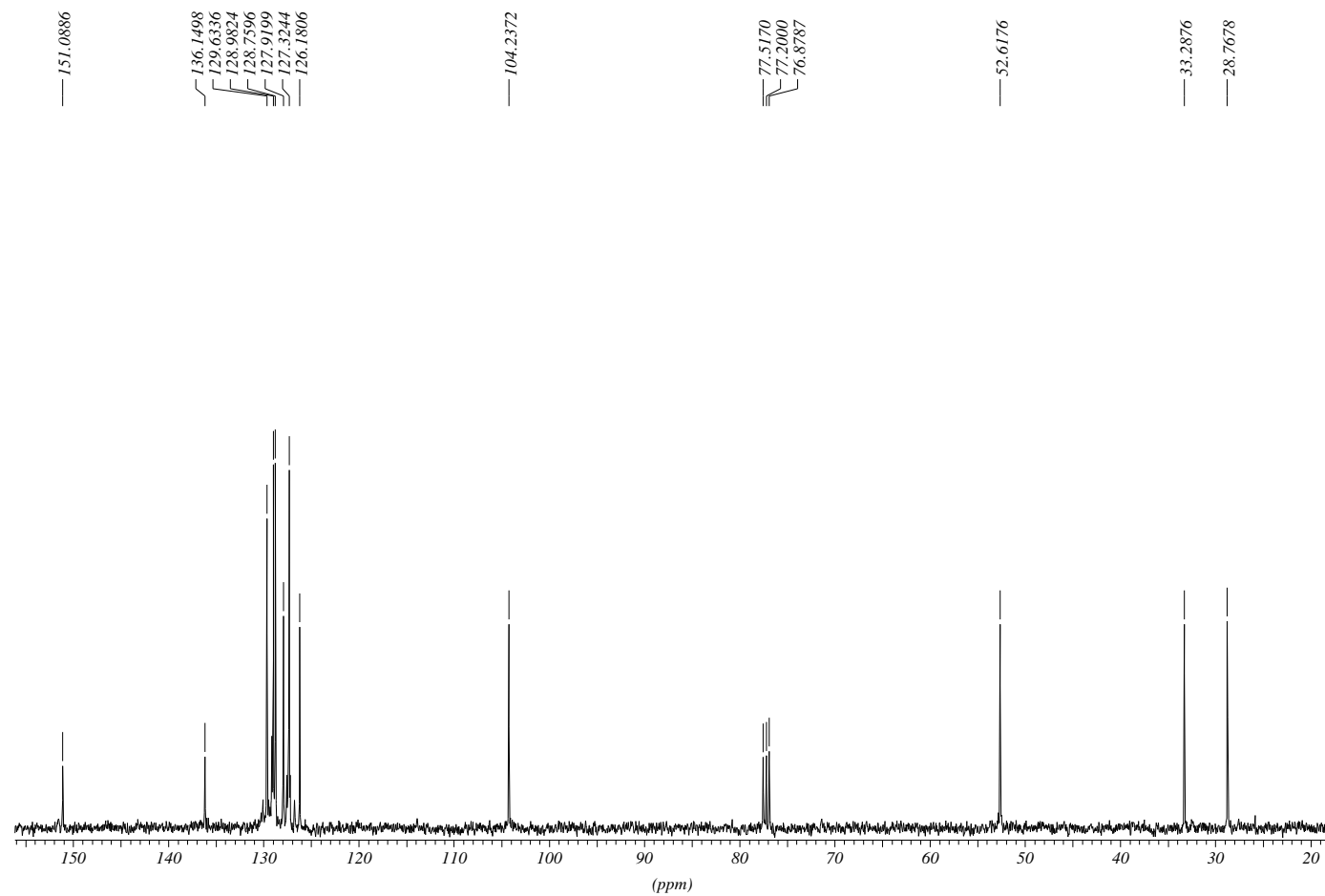
¹H NMR spectrum of **6ad** (CDCl₃)



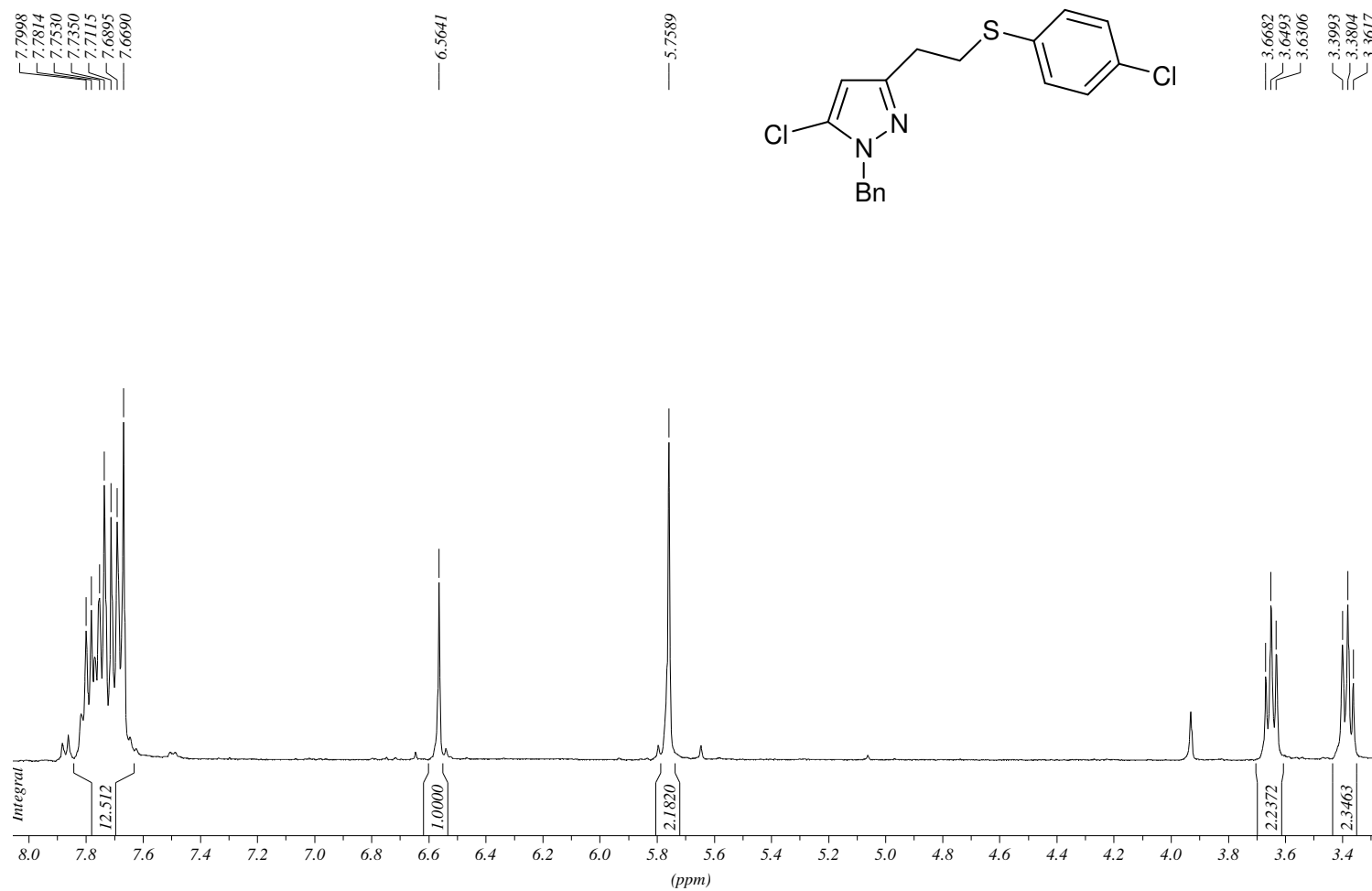
¹³C NMR spectrum of **6ad** (CDCl₃)



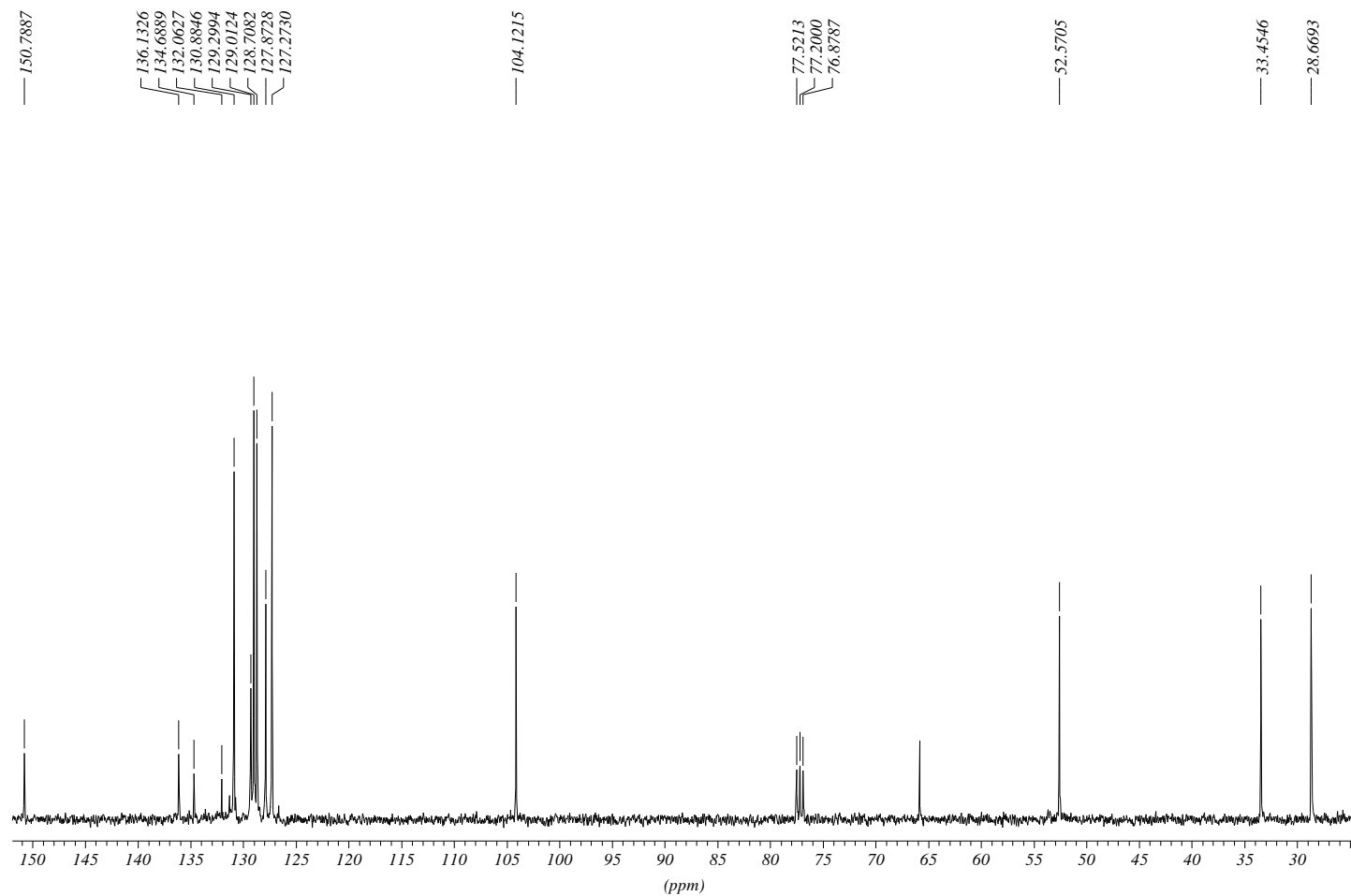
¹H NMR spectrum of **6ba** (CDCl₃)



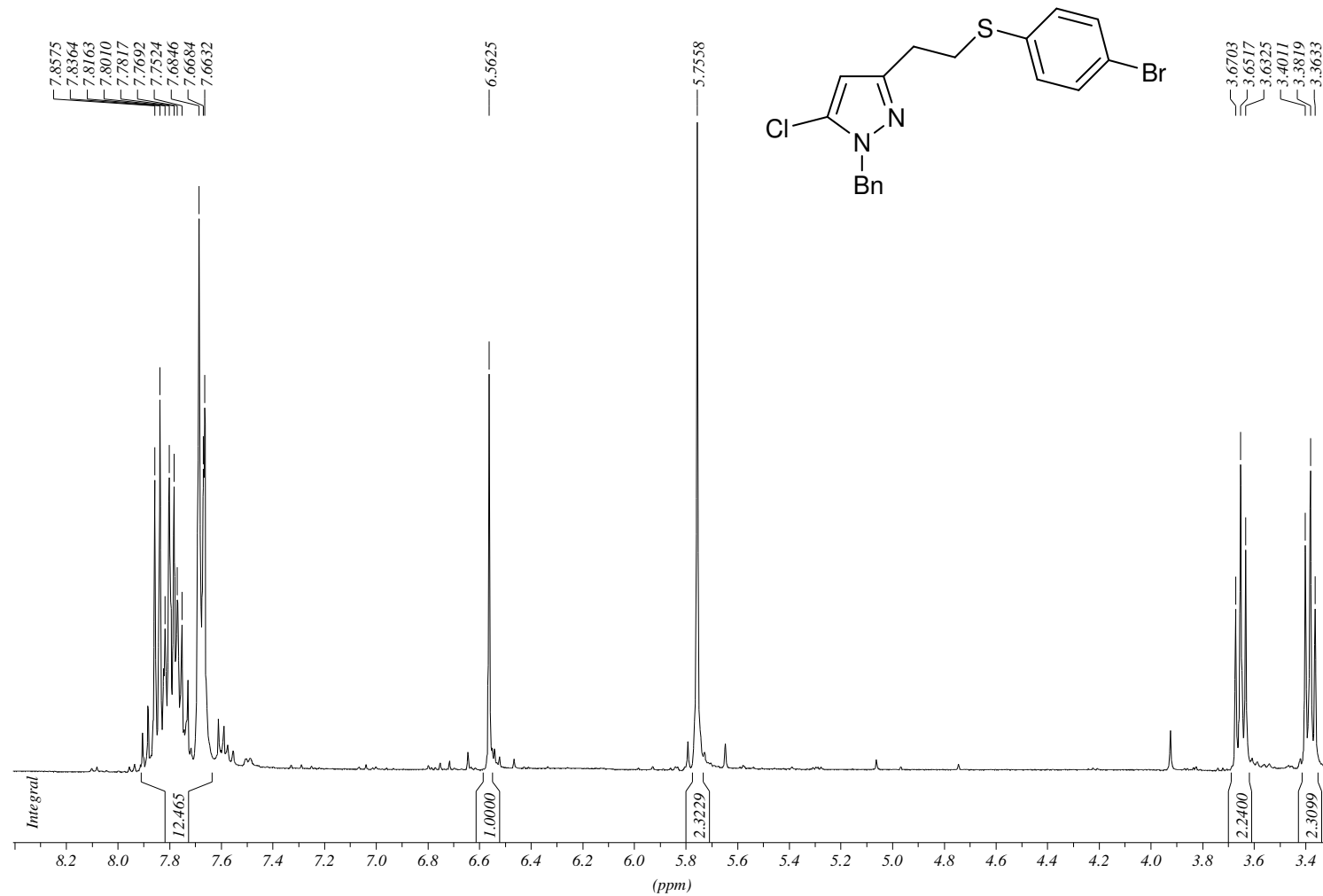
¹³C NMR spectrum of **6ba** (CDCl₃)



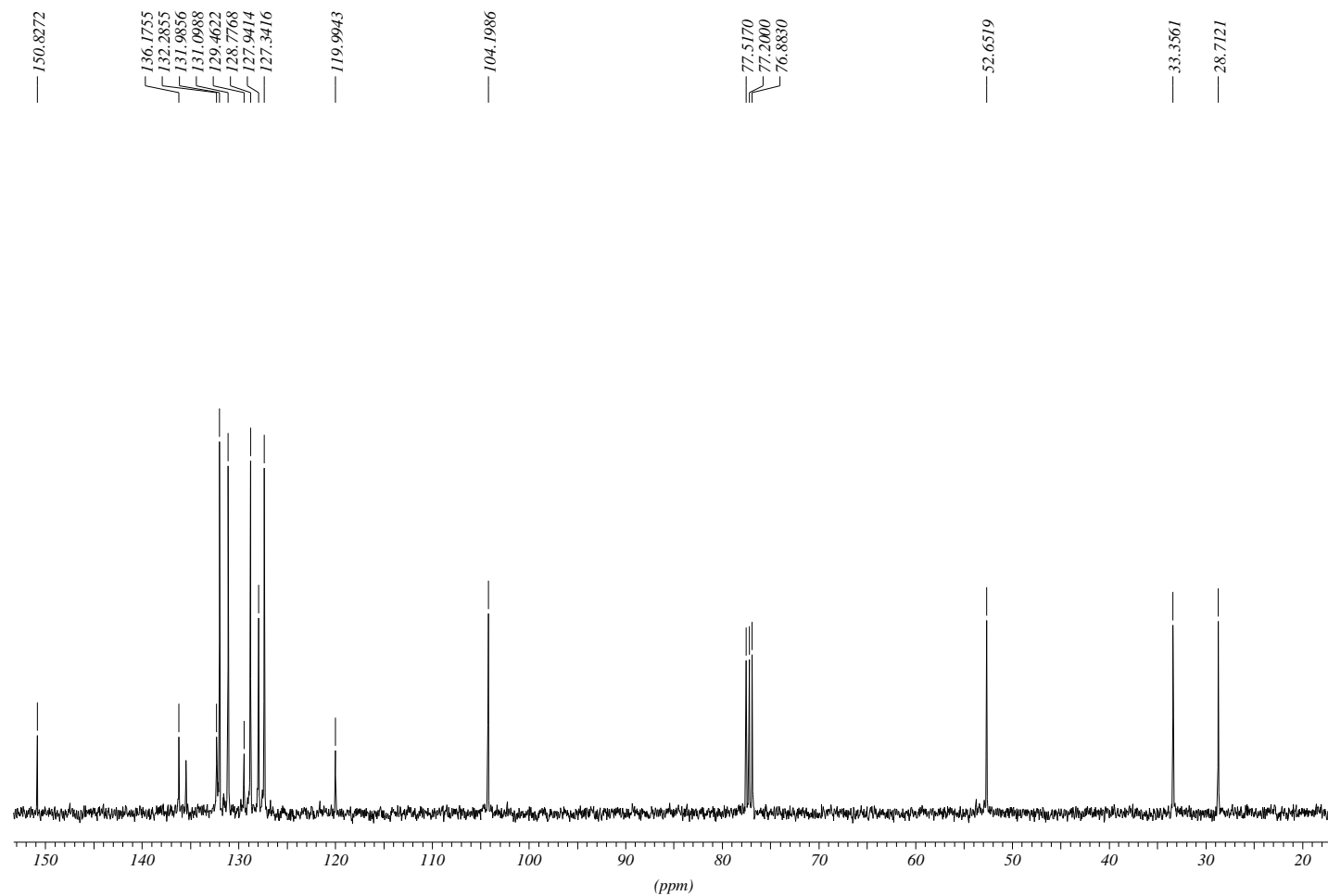
¹H NMR spectrum of **6bb** (CDCl₃)



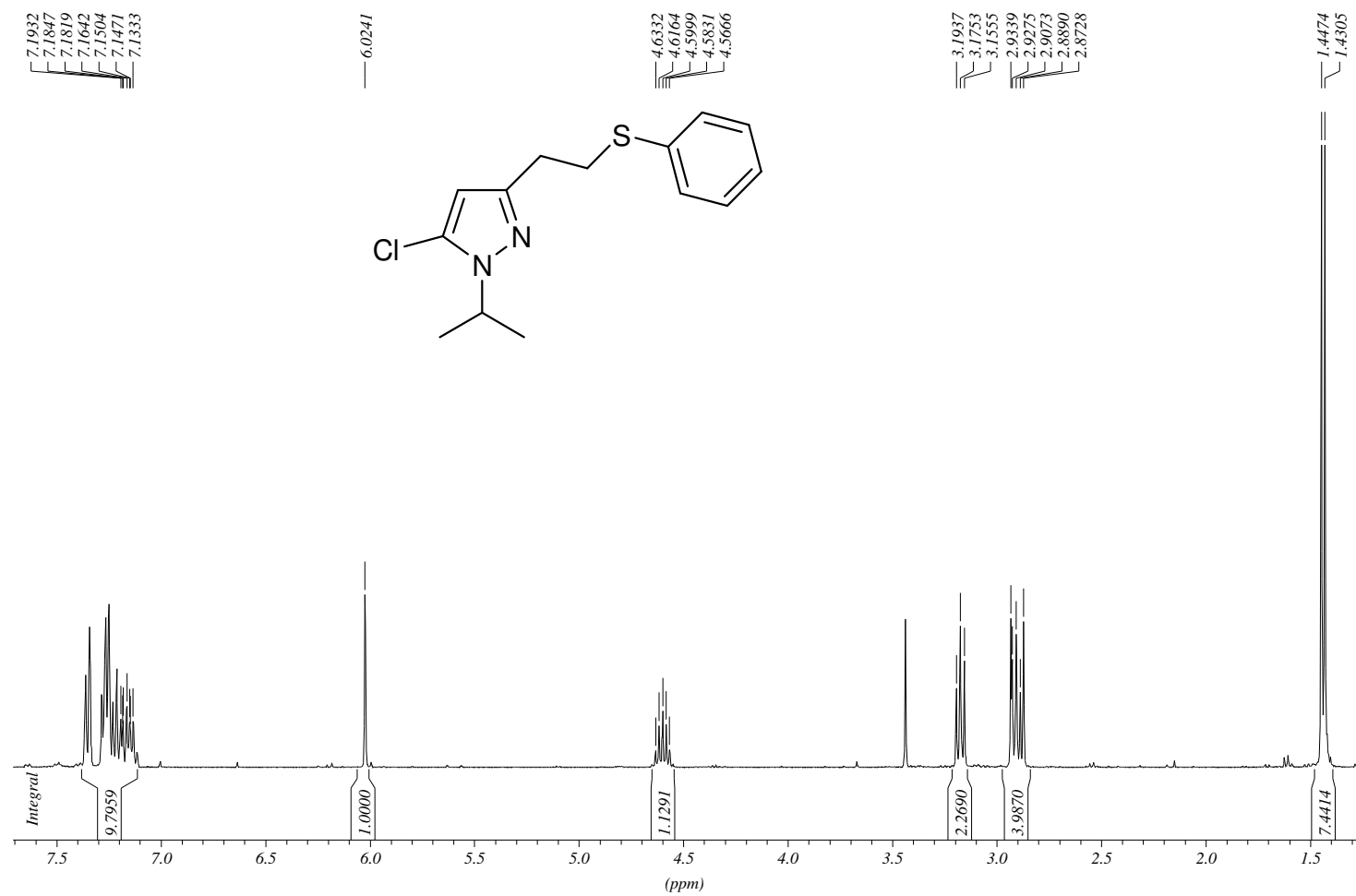
¹³C NMR spectrum of **6bb** (CDCl₃)



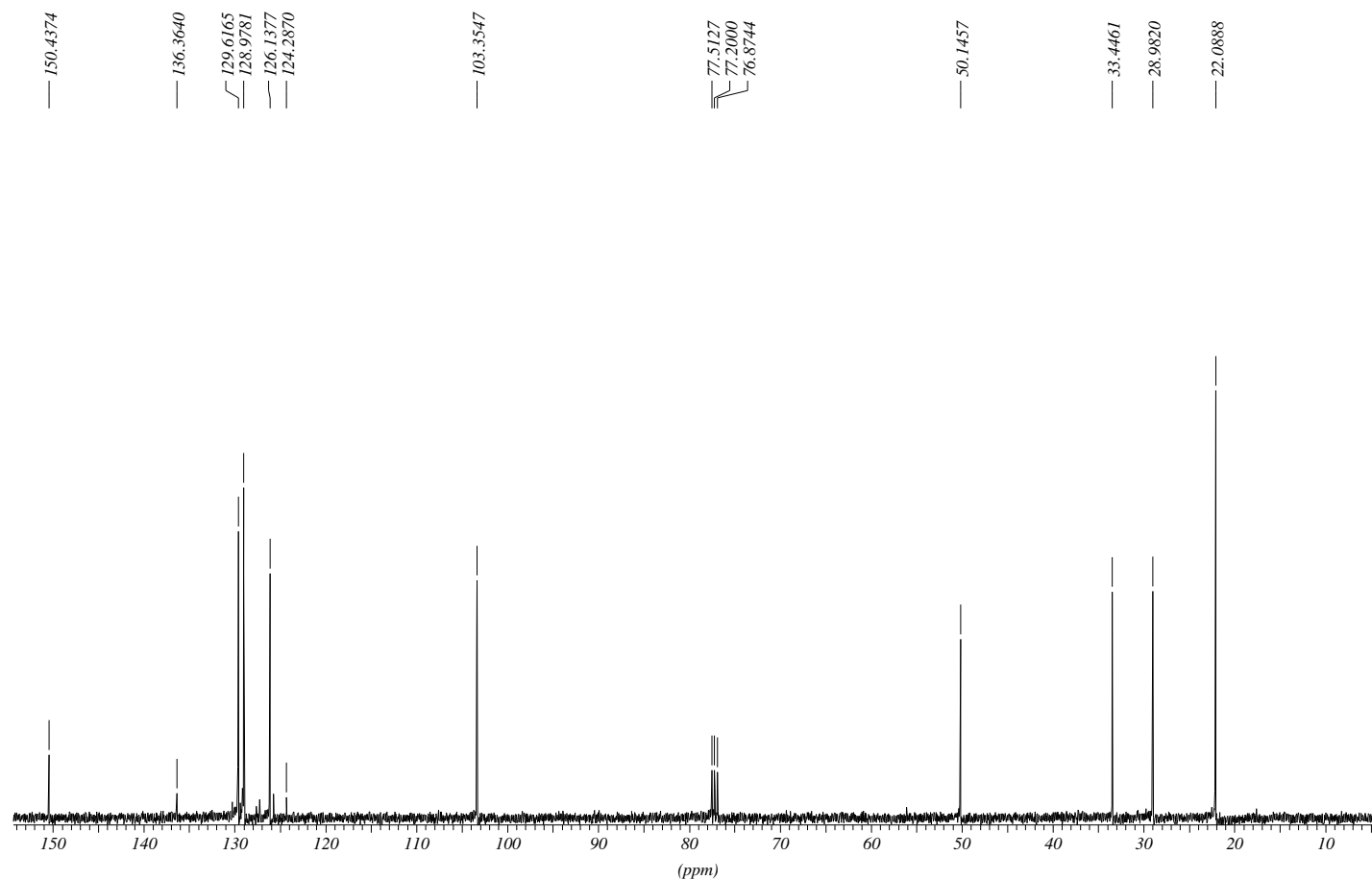
¹H NMR spectrum of **6bc** (CDCl₃)



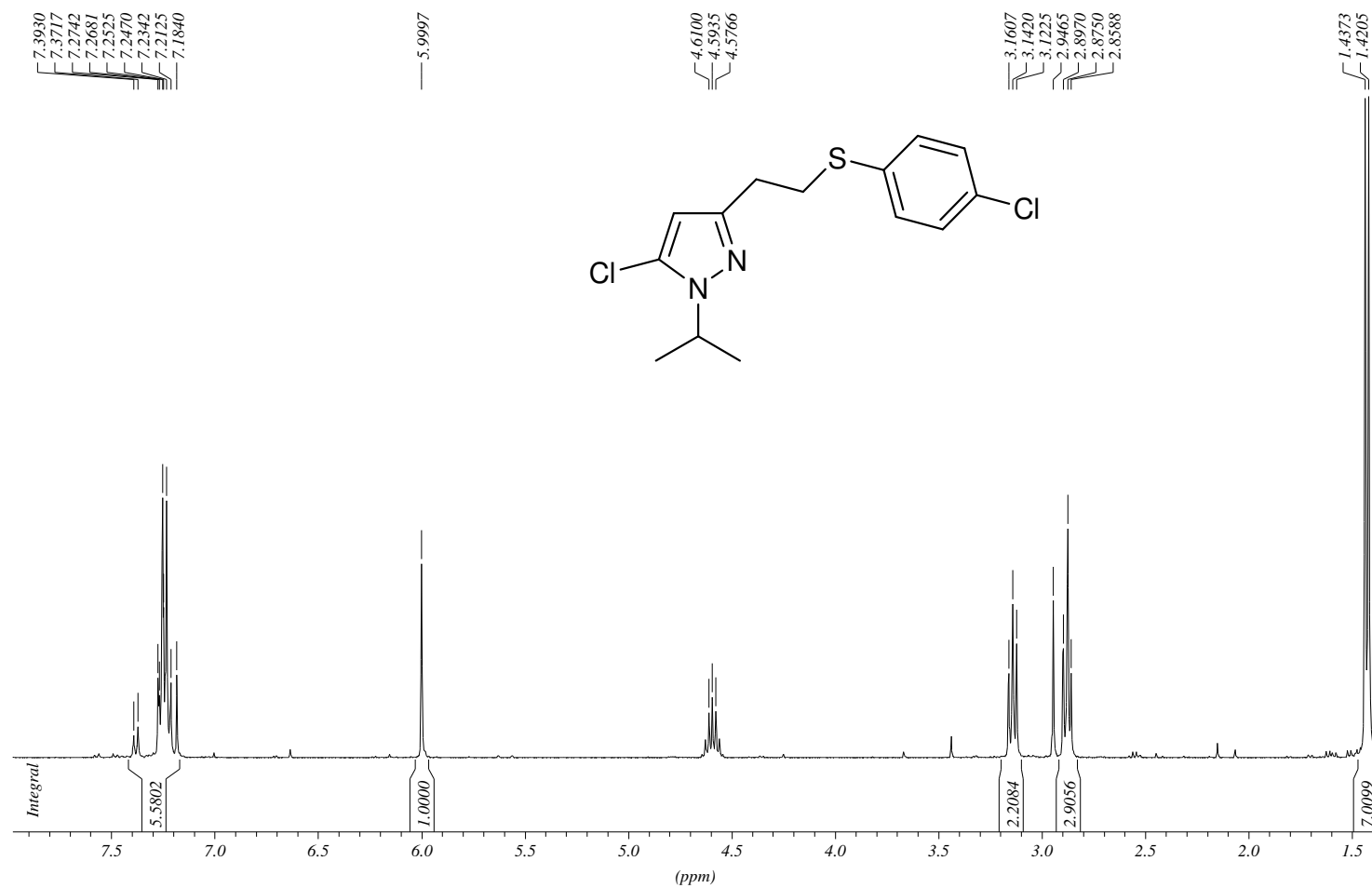
¹³C NMR spectrum of **6bc** (CDCl₃)



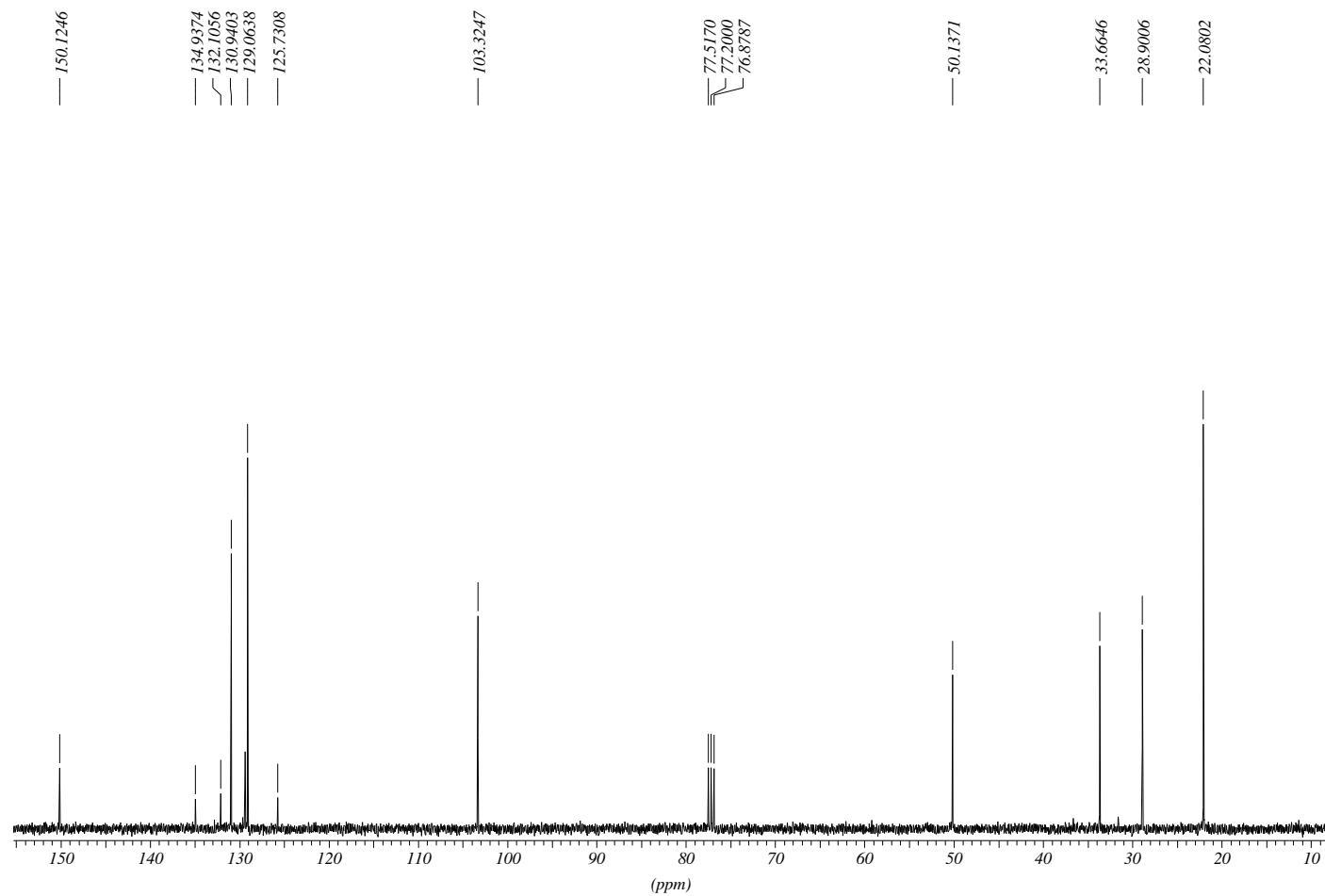
¹H NMR spectrum of **6ca** (CDCl₃)



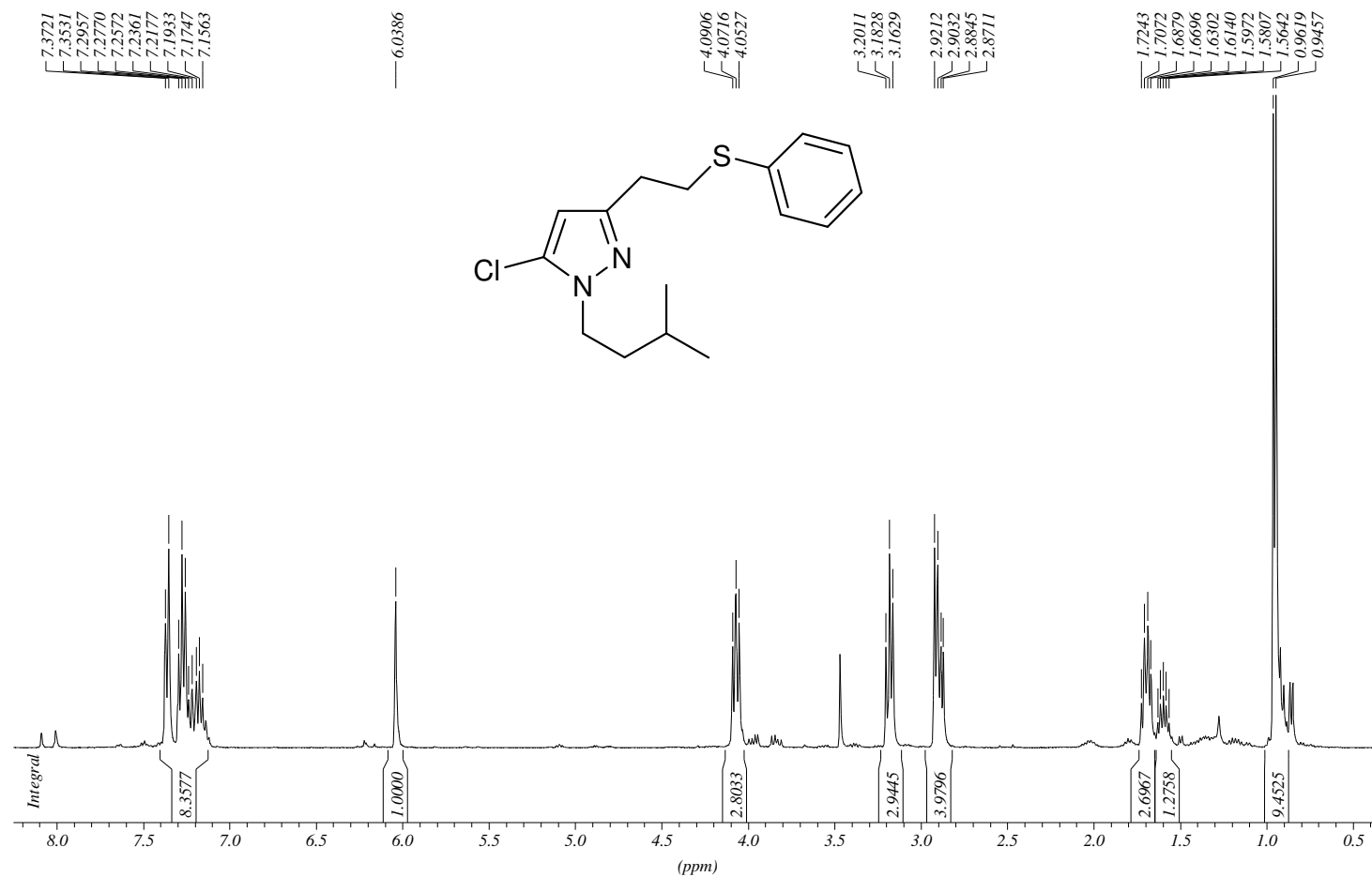
¹³C NMR spectrum of **6ca** (CDCl₃)



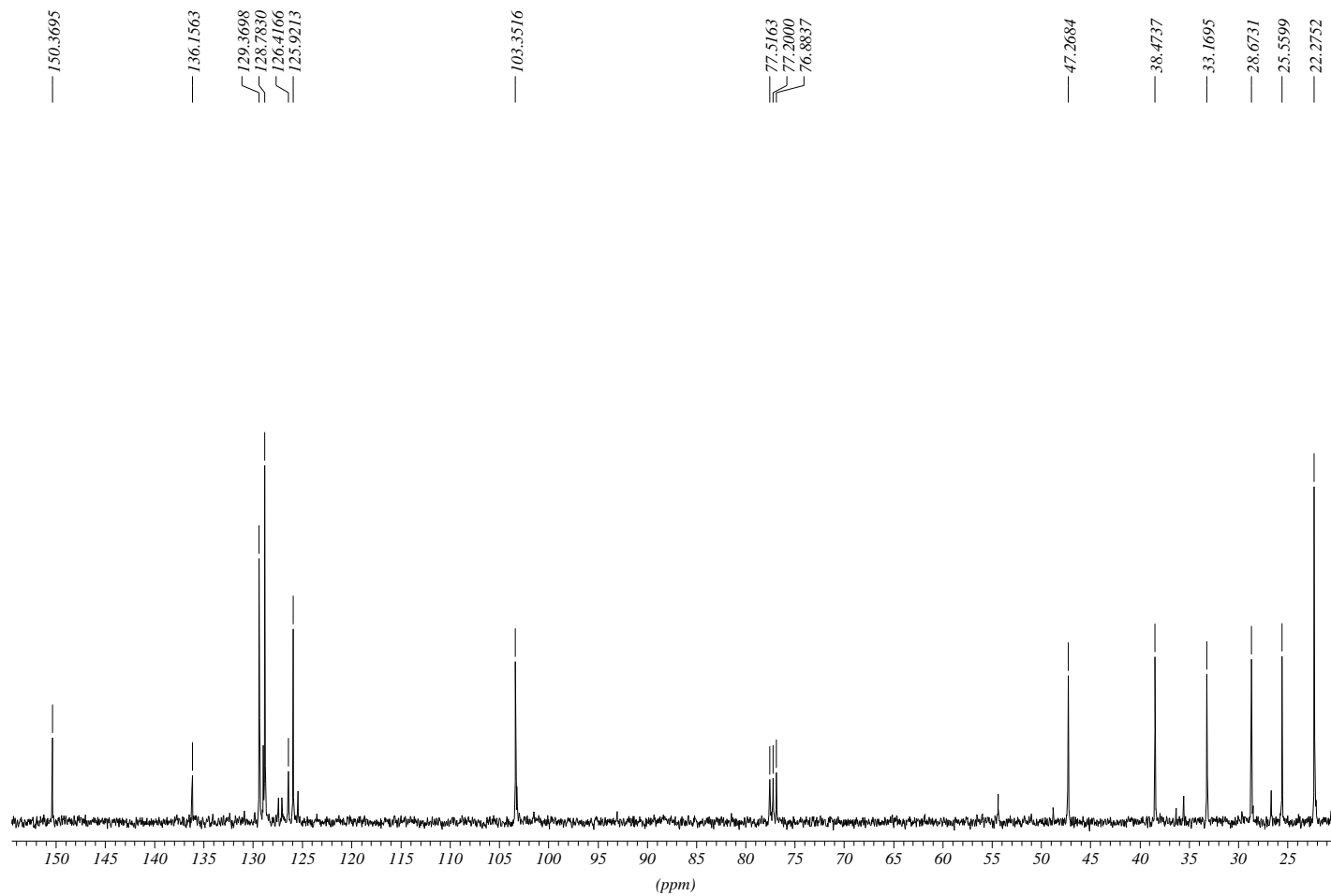
¹H NMR spectrum of **6cb** (CDCl₃)



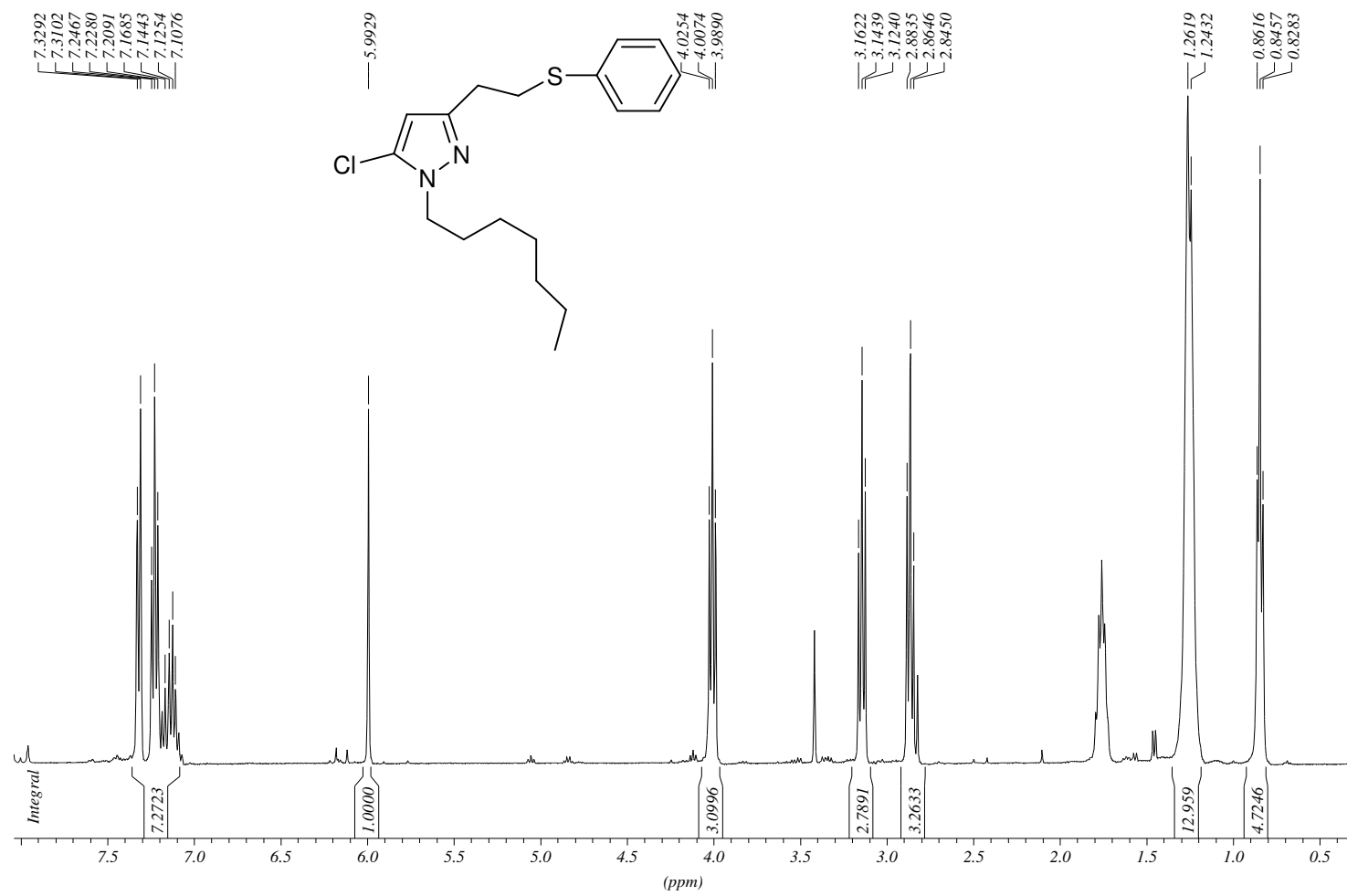
¹³C NMR spectrum of **6cb** (CDCl₃)



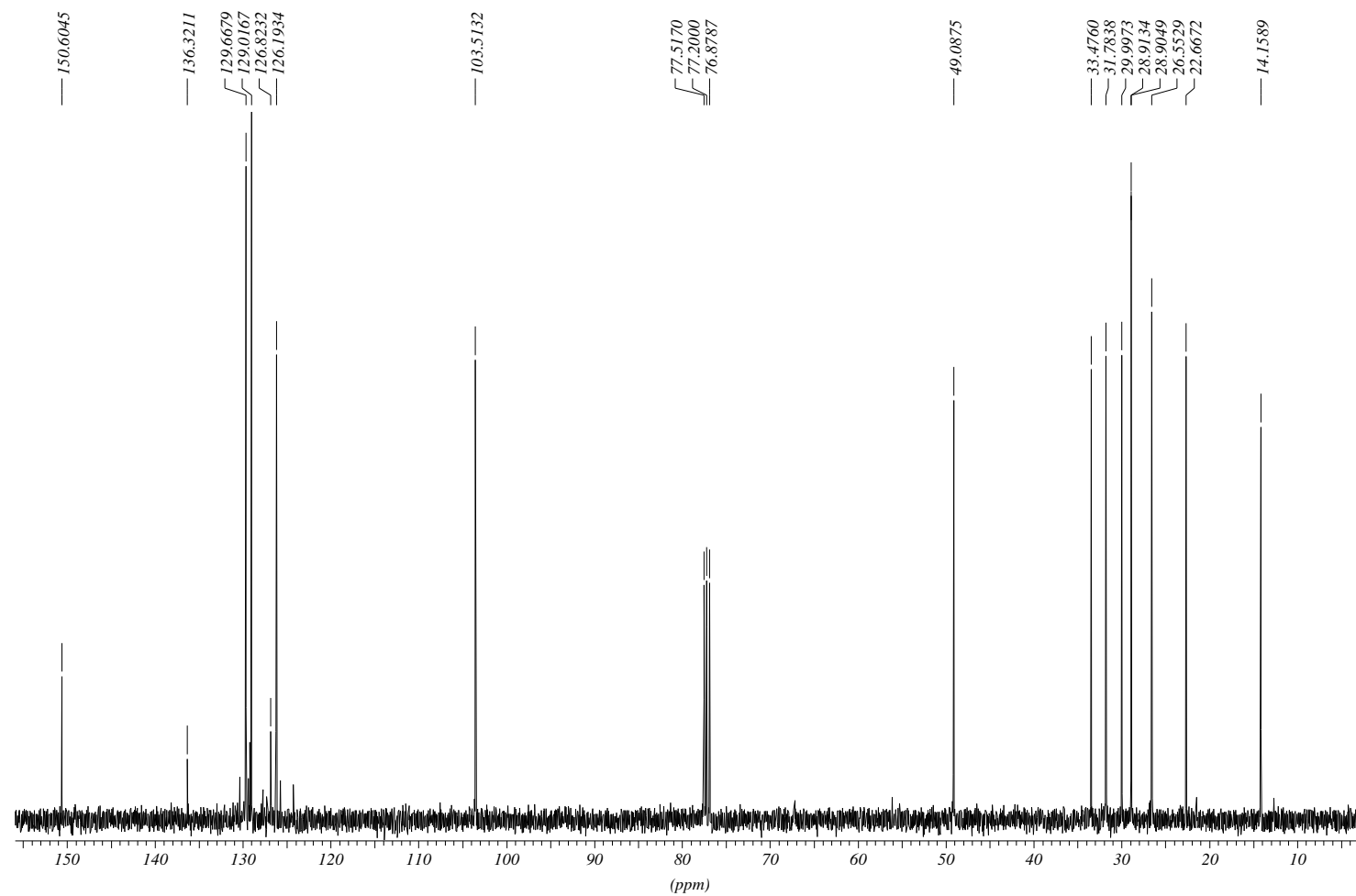
¹H NMR spectrum of **6da** (CDCl₃)



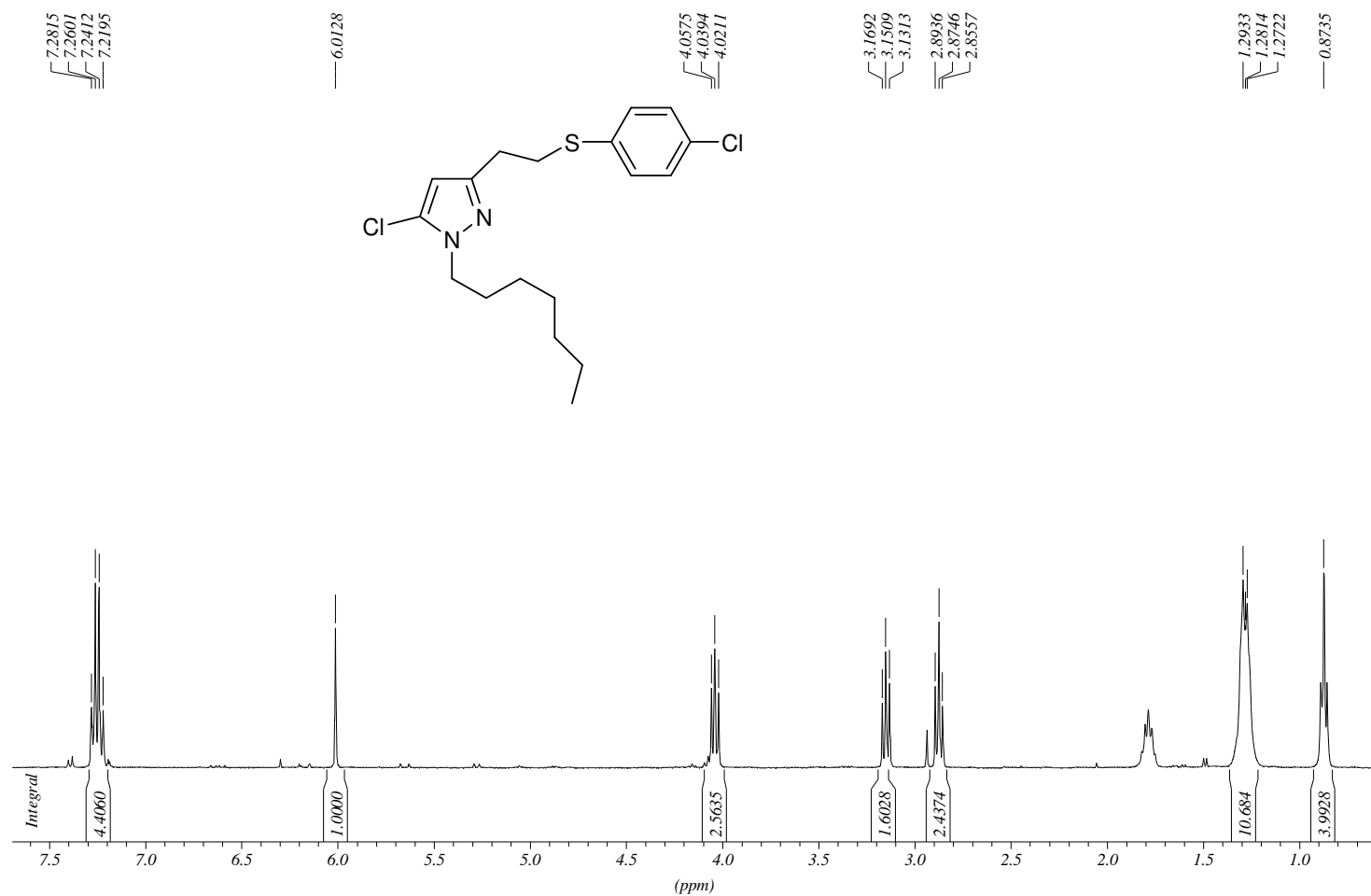
¹³C NMR spectrum of **6da** (CDCl₃)



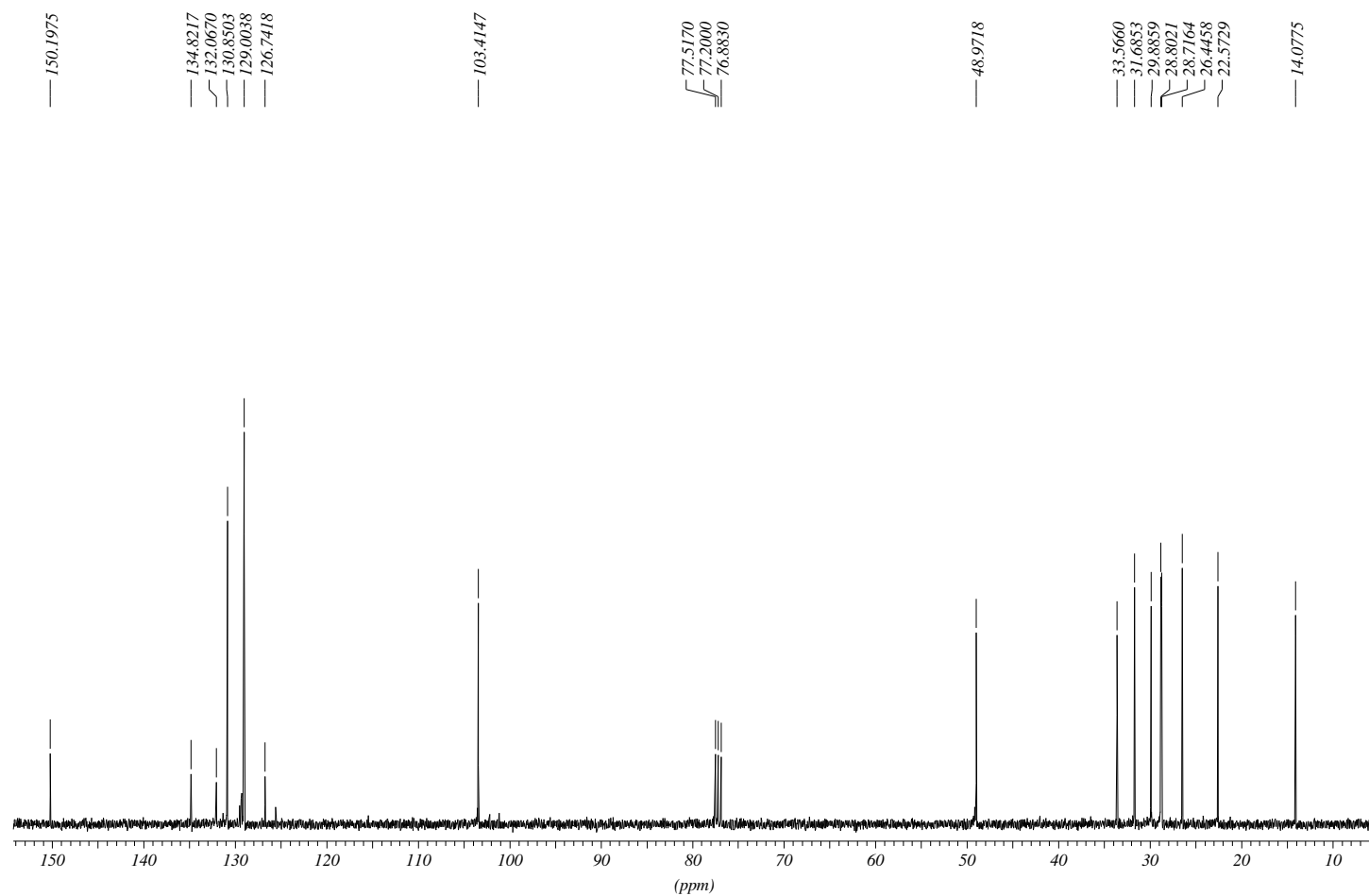
^1H NMR spectrum of **6ea** (CDCl₃)



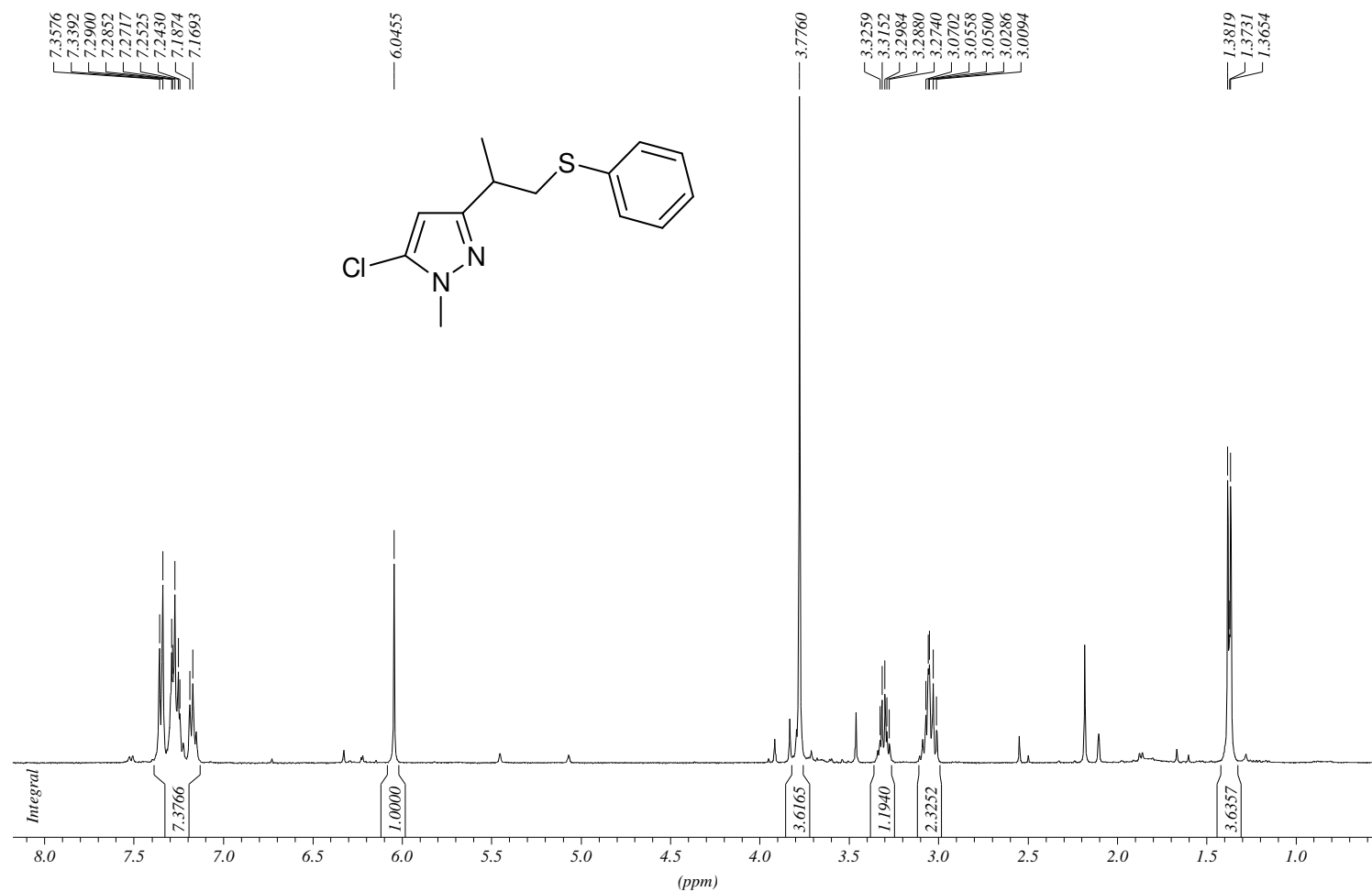
¹³C NMR spectrum of **6ea** (CDCl₃)



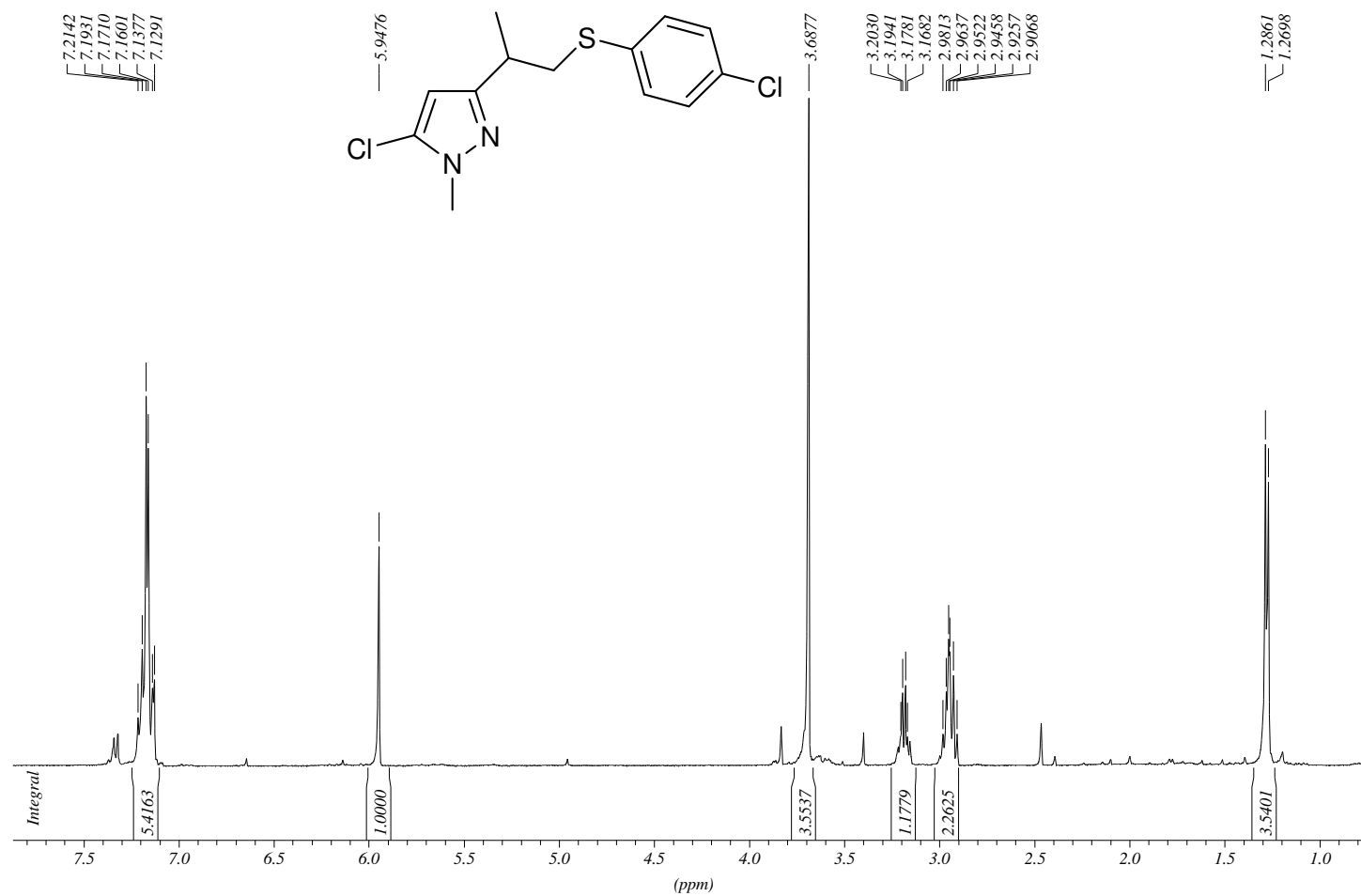
¹H NMR spectrum of **6eb** (CDCl₃)



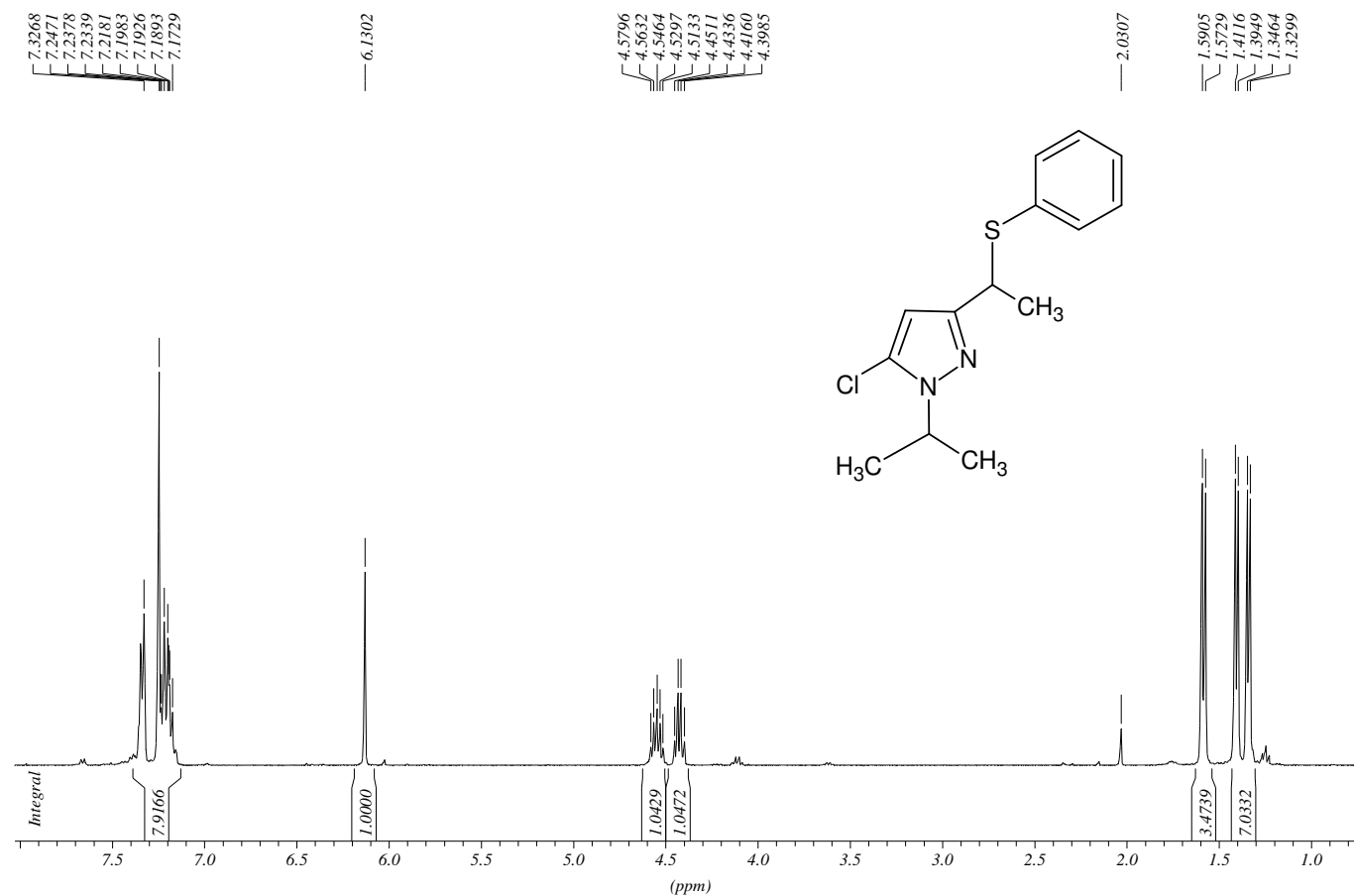
^{13}C NMR spectrum of **6eb** (CDCl_3)



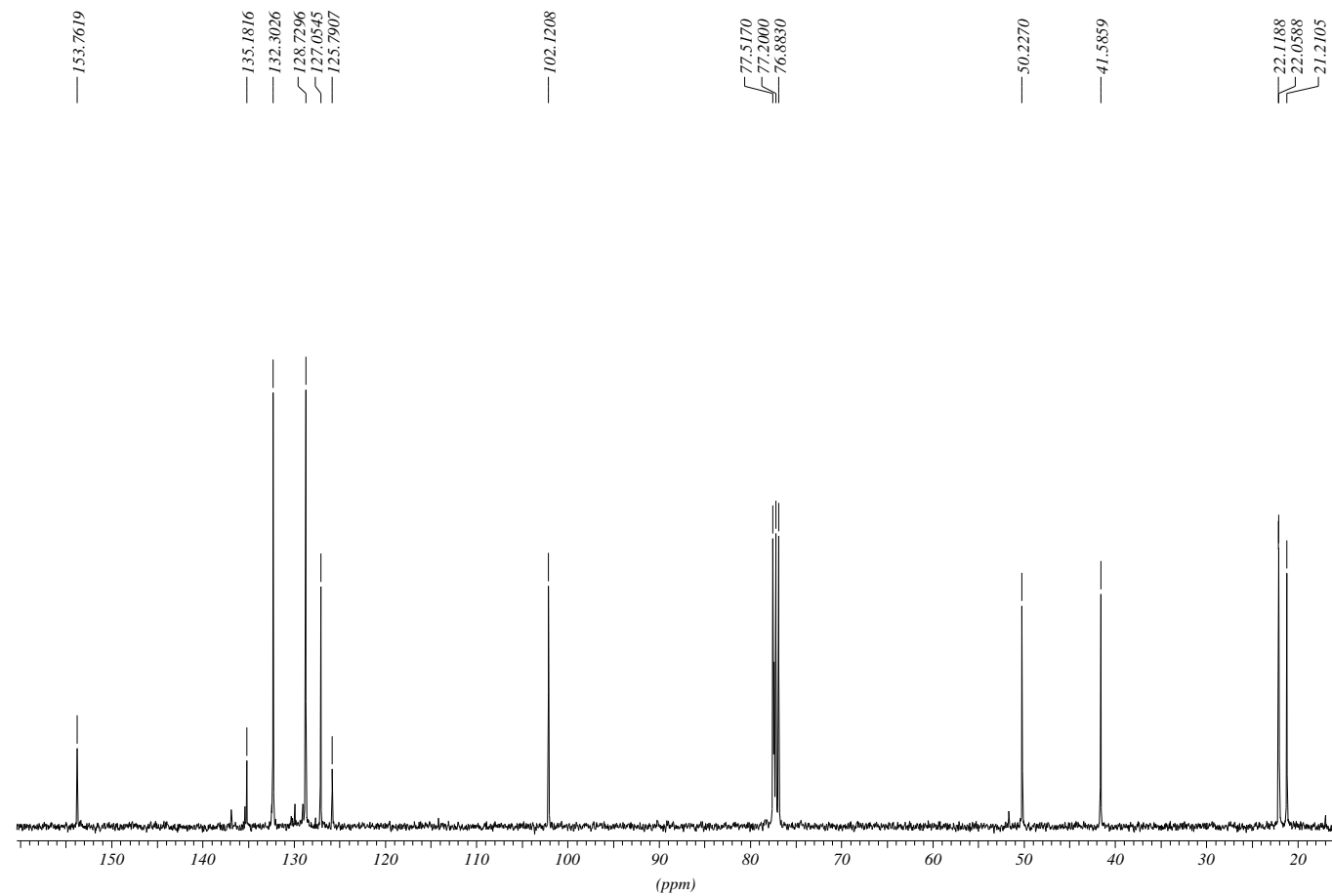
¹H NMR spectrum of **6fa** (CDCl₃)



¹H NMR spectrum of **6fb** (CDCl₃)



¹H NMR spectrum of **7** (CDCl₃)



¹³C NMR spectrum of **7** (CDCl₃)