

Figure S1. ^1H NMR spectrum of S4.

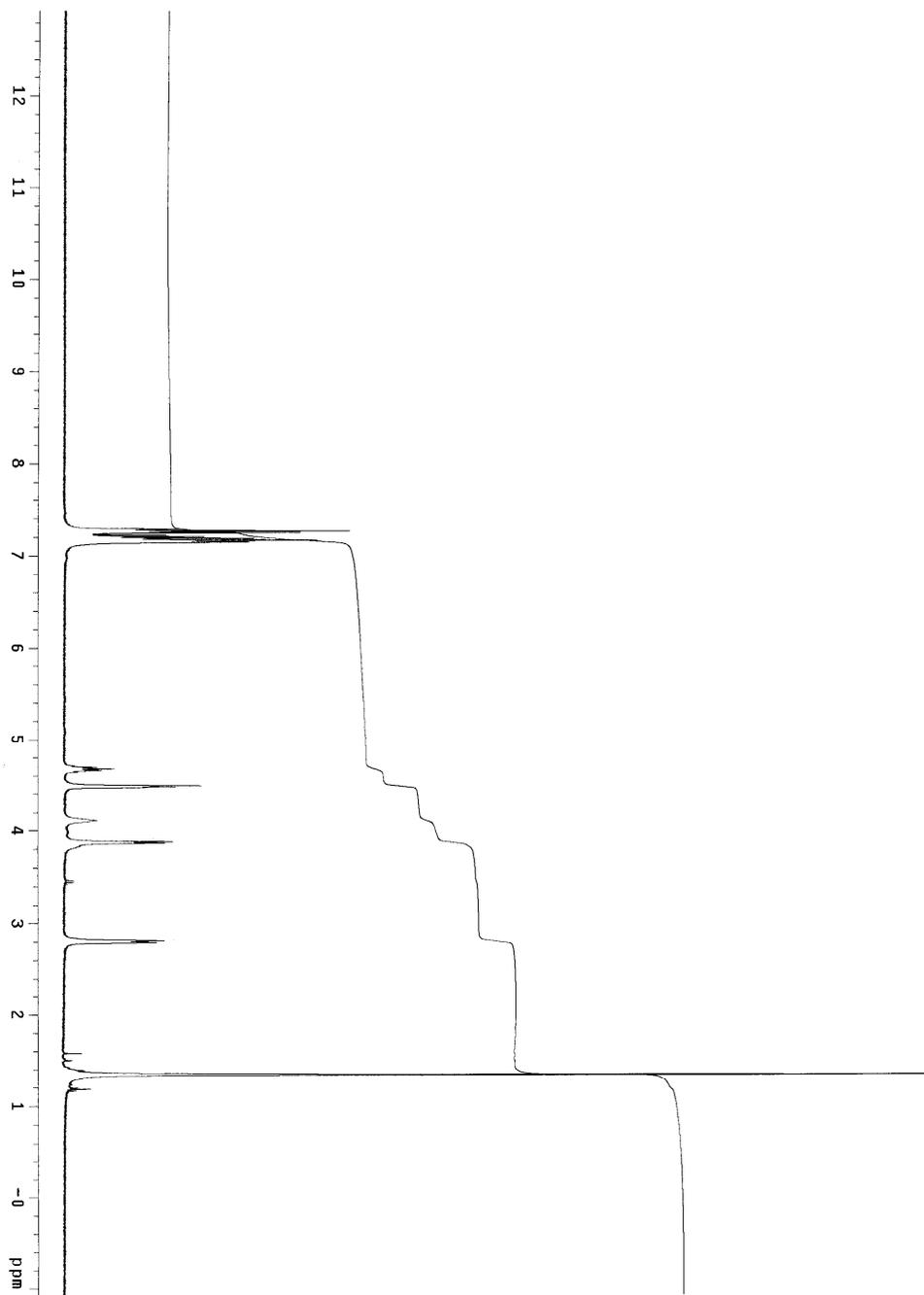


Figure S2. $^{13}\text{C}\{^1\text{H}\}$ NMR spectrum of S4.

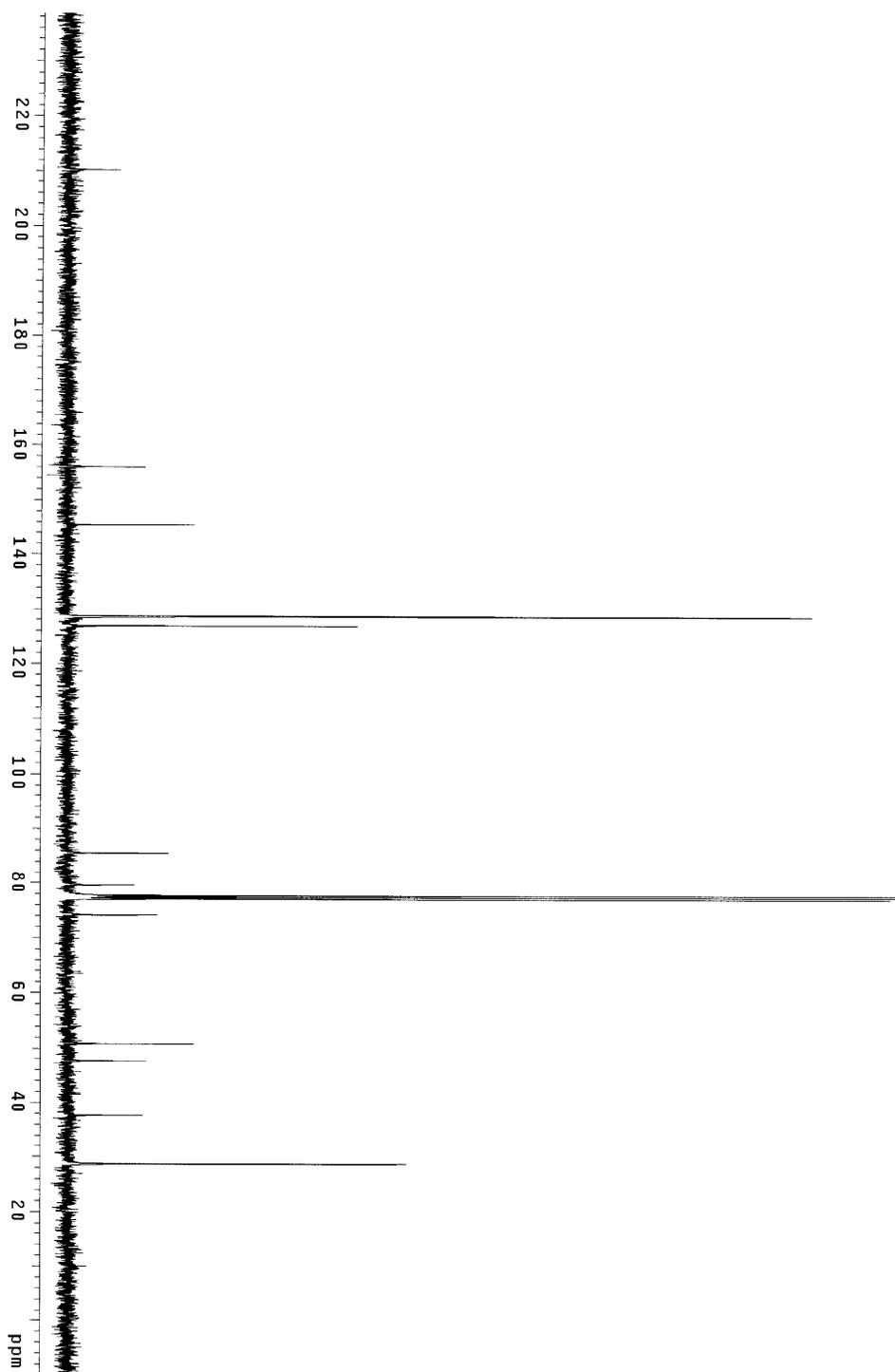


Figure S3. ^1H NMR spectrum of S5.

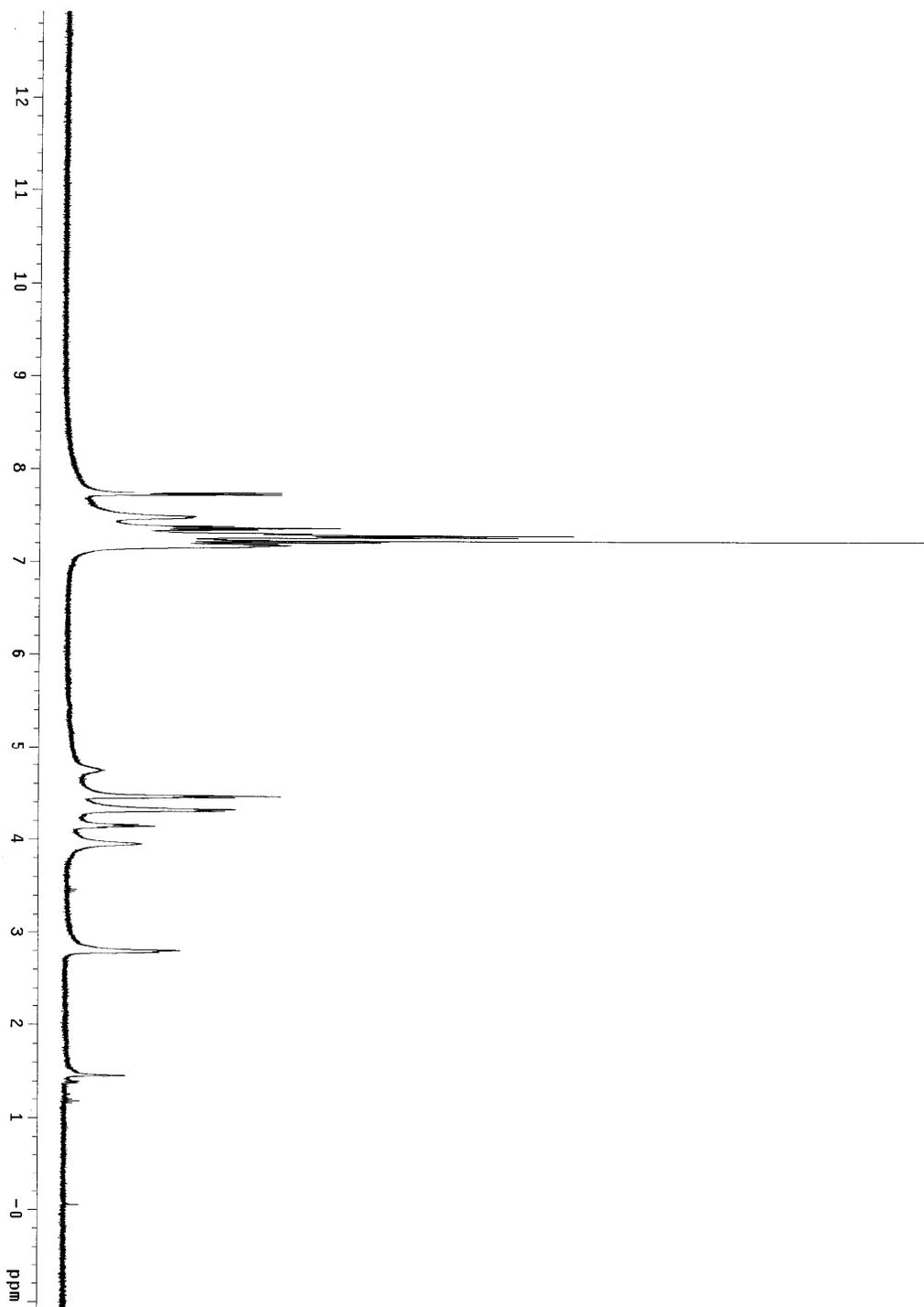


Figure S4. $^{13}\text{C}\{^1\text{H}\}$ NMR of S5.

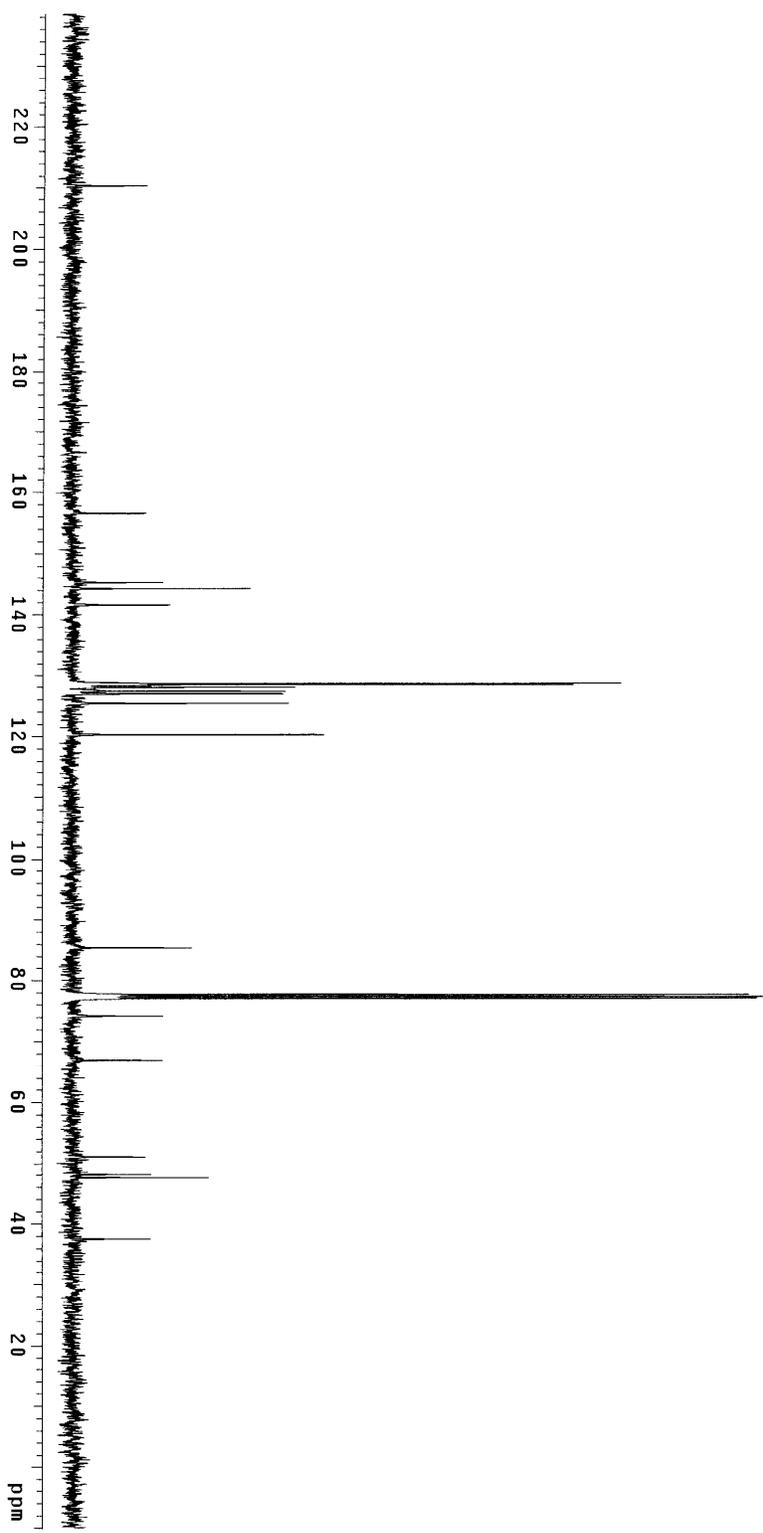


Figure S5. ^1H NMR spectrum for benzyl (1-phenyl-4,5-hexadienyl)carbamate (Table 1, entry 3) in CDCl_3 .

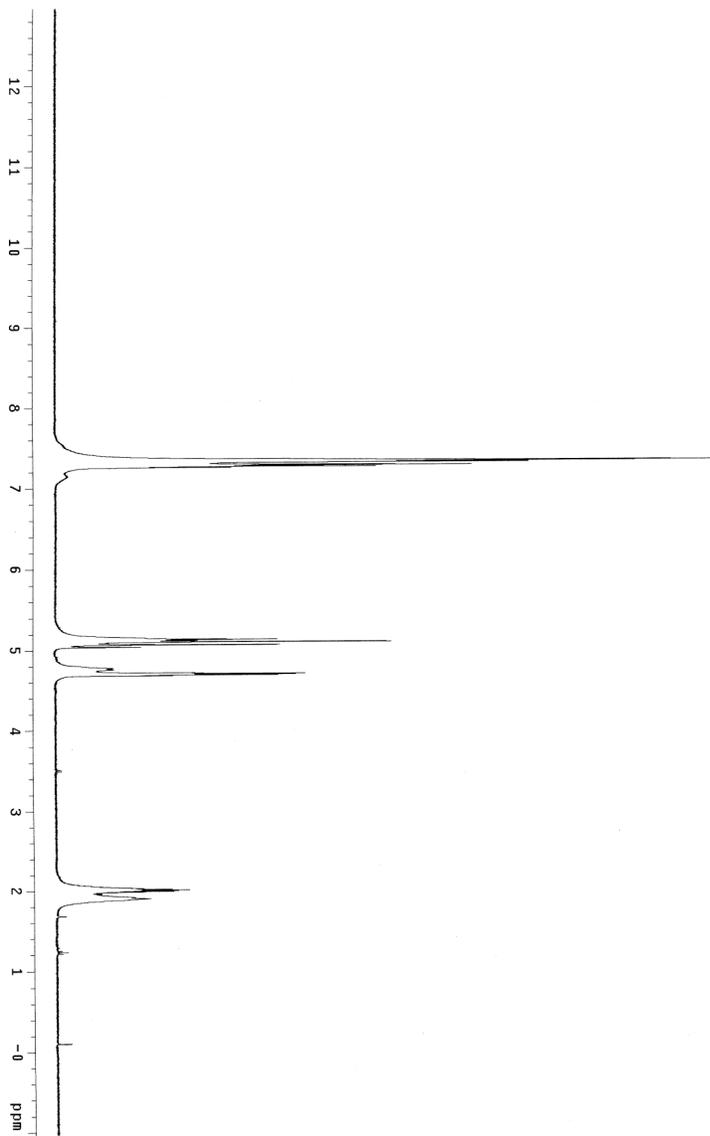


Figure S6. ^{13}C NMR spectrum for benzyl (1-phenyl-4,5-hexadienyl)carbamate (Table 1, entry 3) in CDCl_3 .

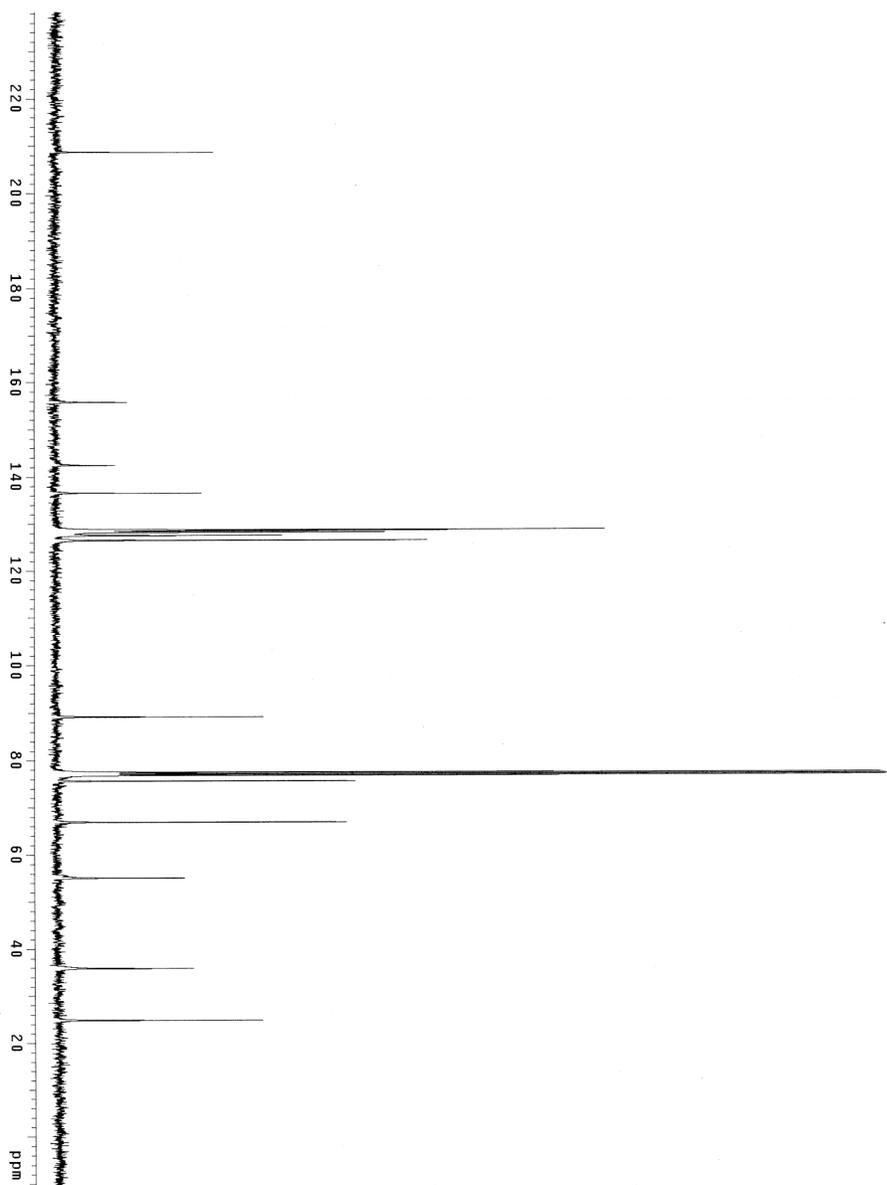


Figure S7. ^1H NMR spectrum of **S8**.

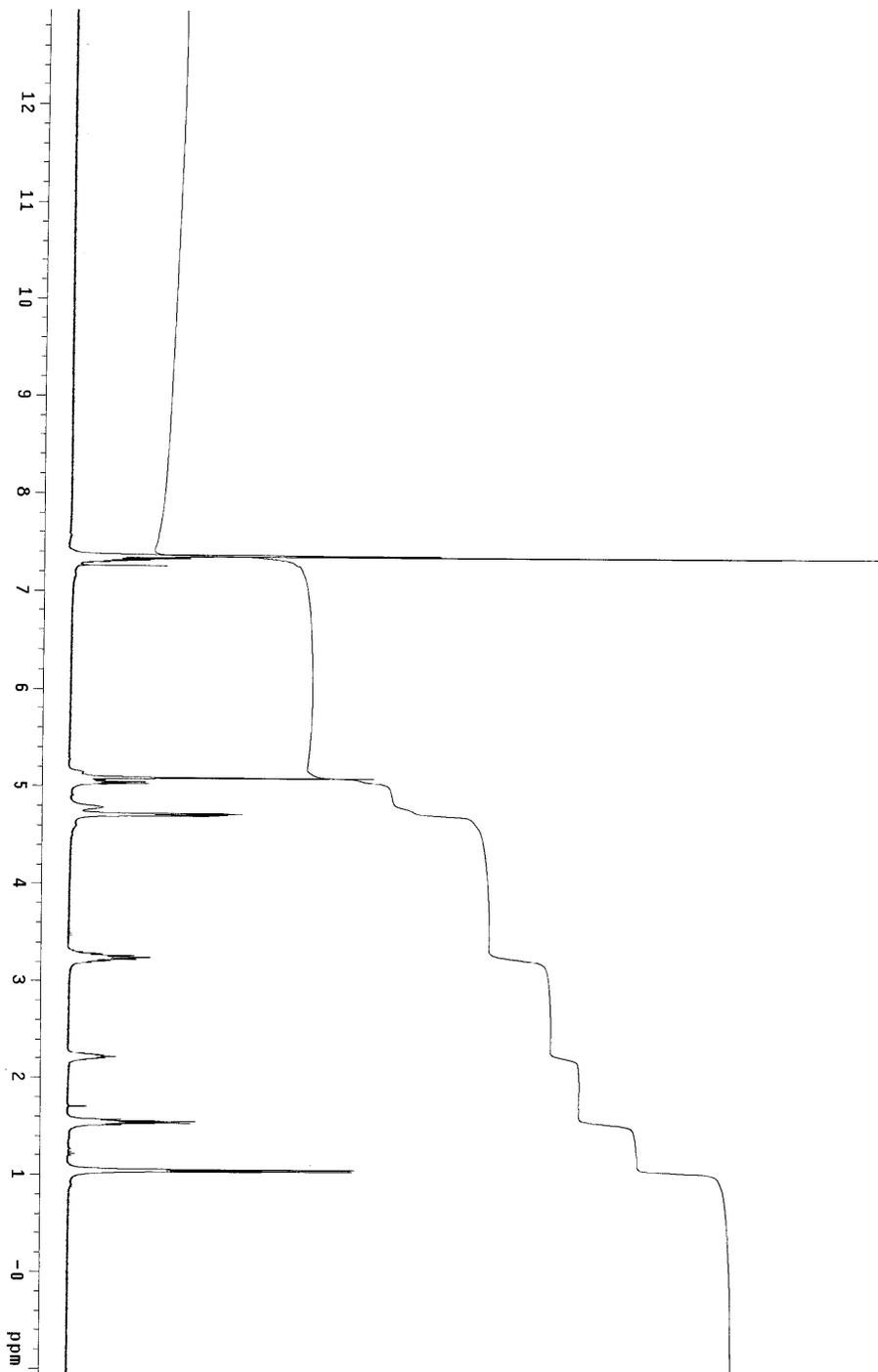


Figure S8. $^{13}\text{C}\{^1\text{H}\}$ NMR spectrum of S8.

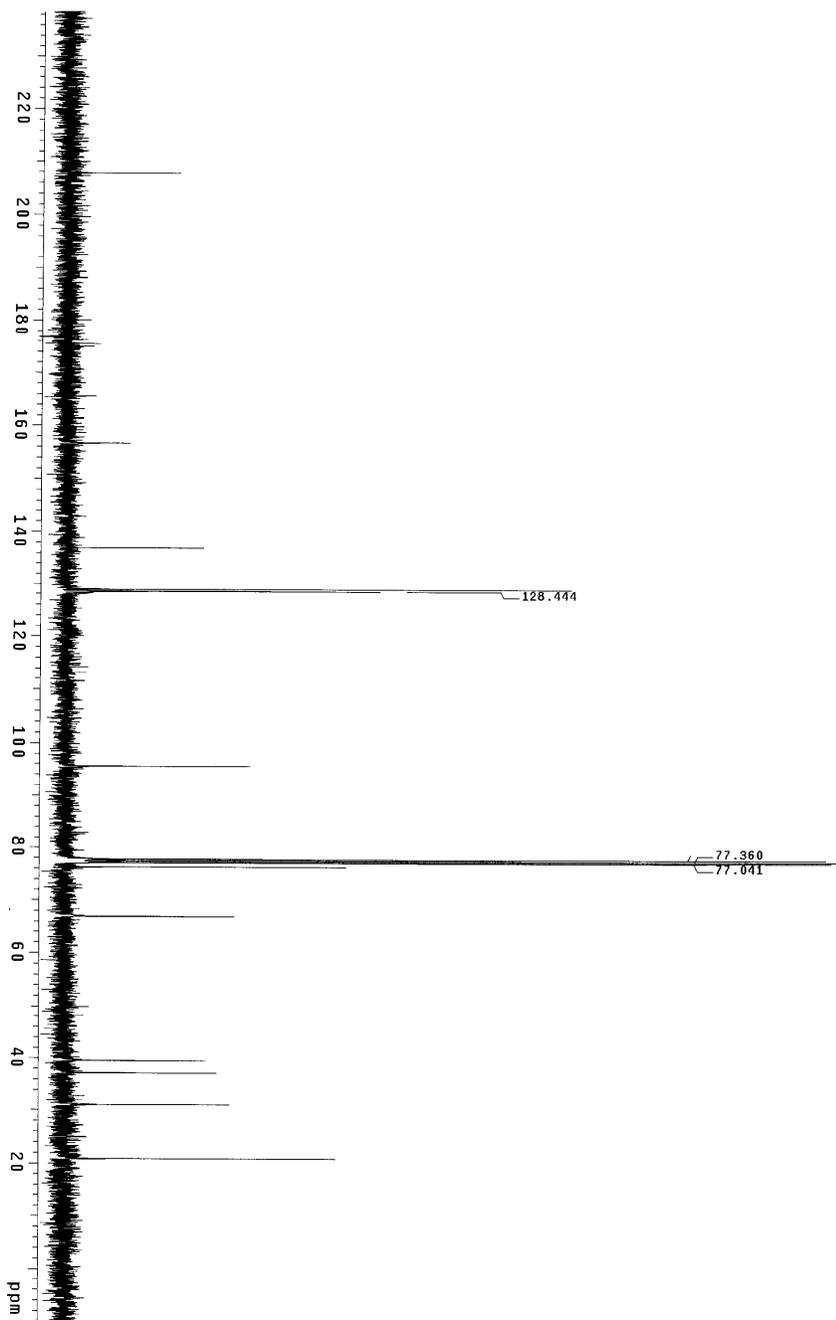


Figure S9. Partial ^{19}F NMR spectra of the Mosher ester of *rac*-**36** (left spectrum) and the Mosher ester of (*S*)-**36** (right spectrum, 84% ee).

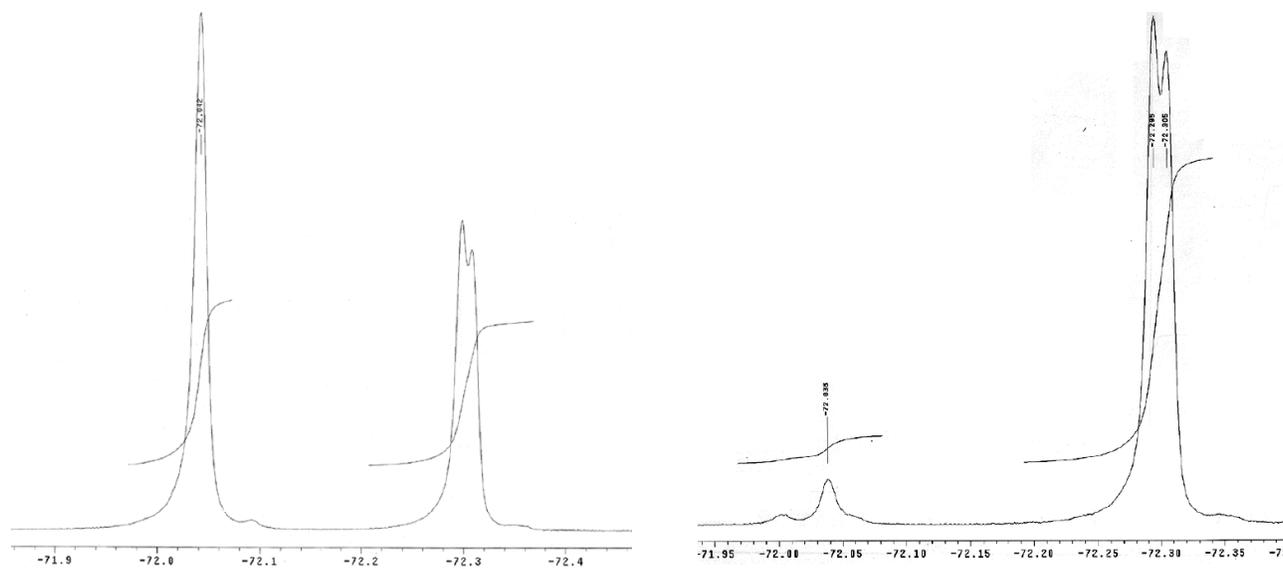


Figure S10. ^1H NMR spectrum of **8** in CDCl_3 .

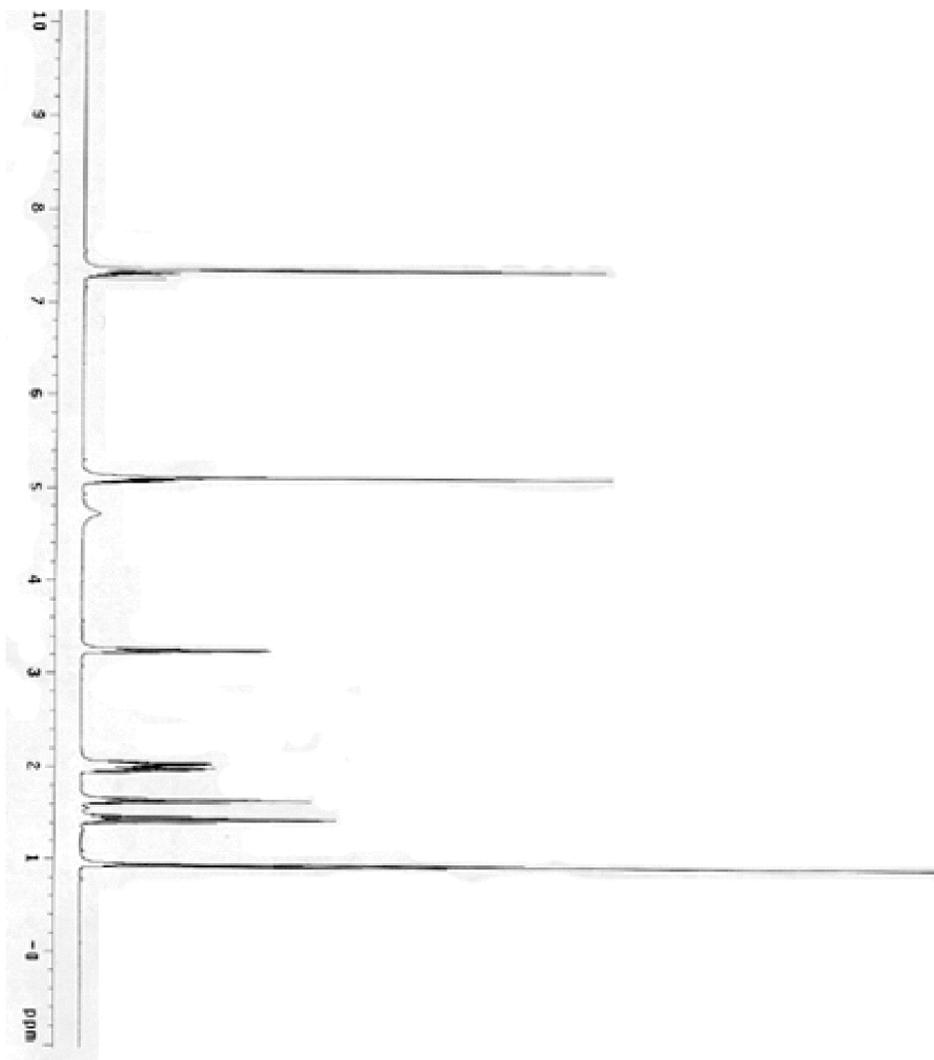


Figure S11. ^{13}C NMR spectrum of **8** in CDCl_3 .

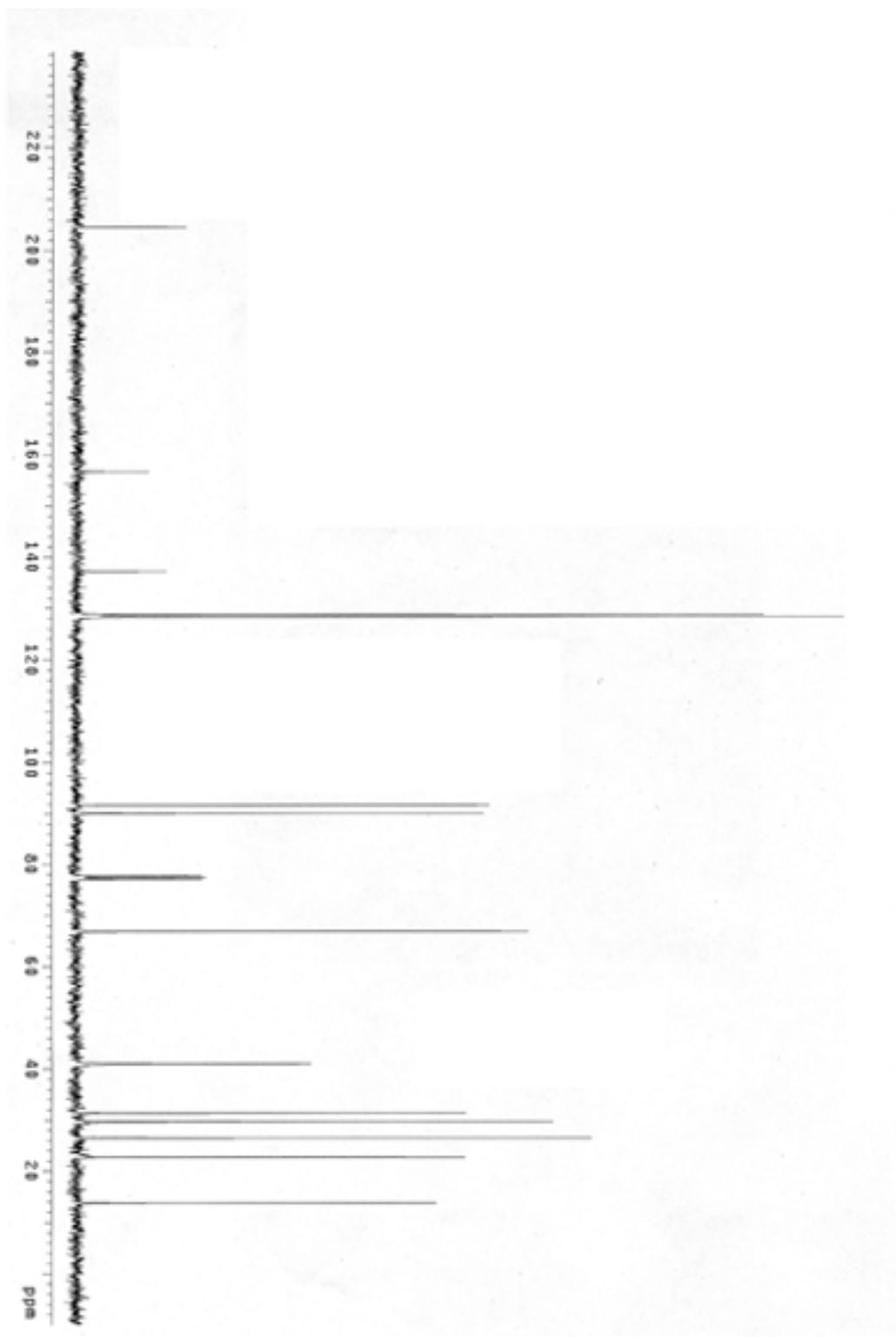


Figure S12. ^1H NMR spectrum for **12** (Table 1, entry 10) in CDCl_3 at $50\text{ }^\circ\text{C}$.

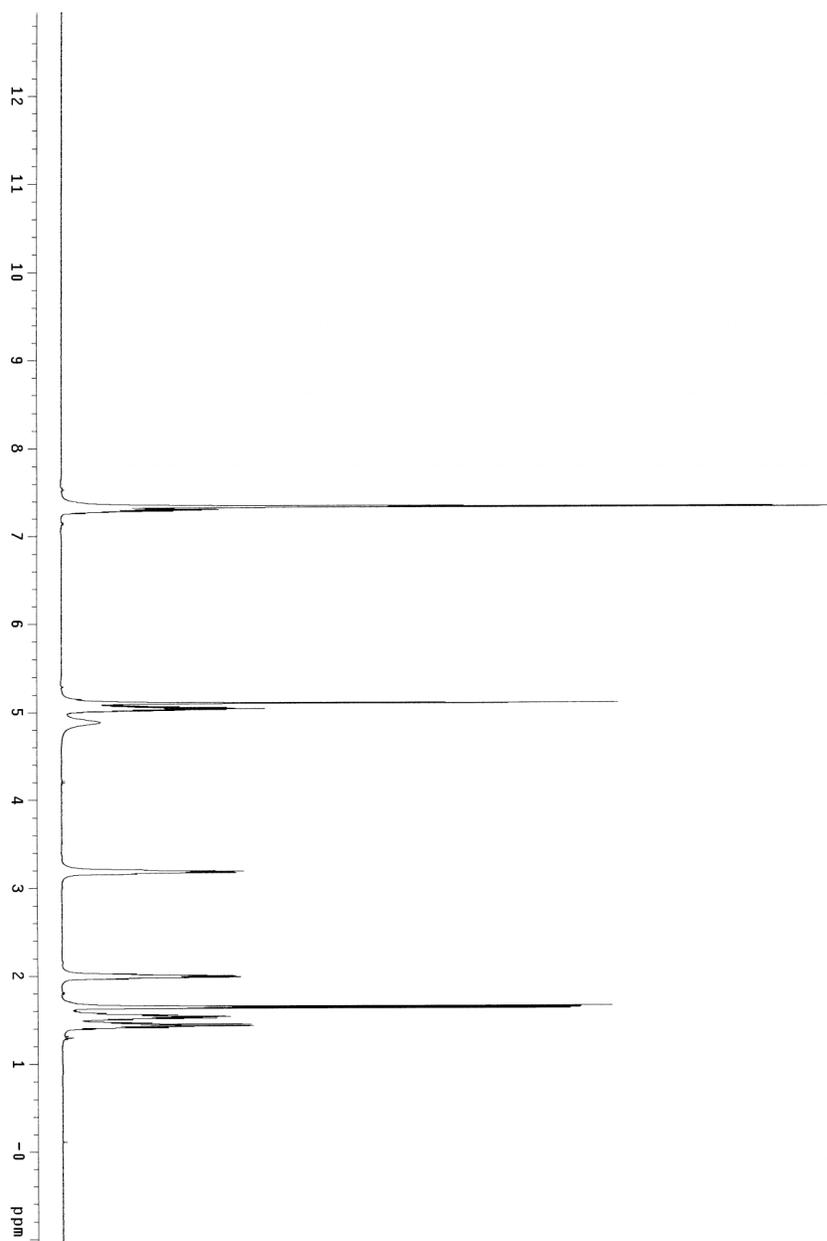


Figure S13. $^{13}\text{C}\{^1\text{H}\}$ NMR spectrum for **12** (Table 1, entry 10) in CDCl_3 at $50\text{ }^\circ\text{C}$.

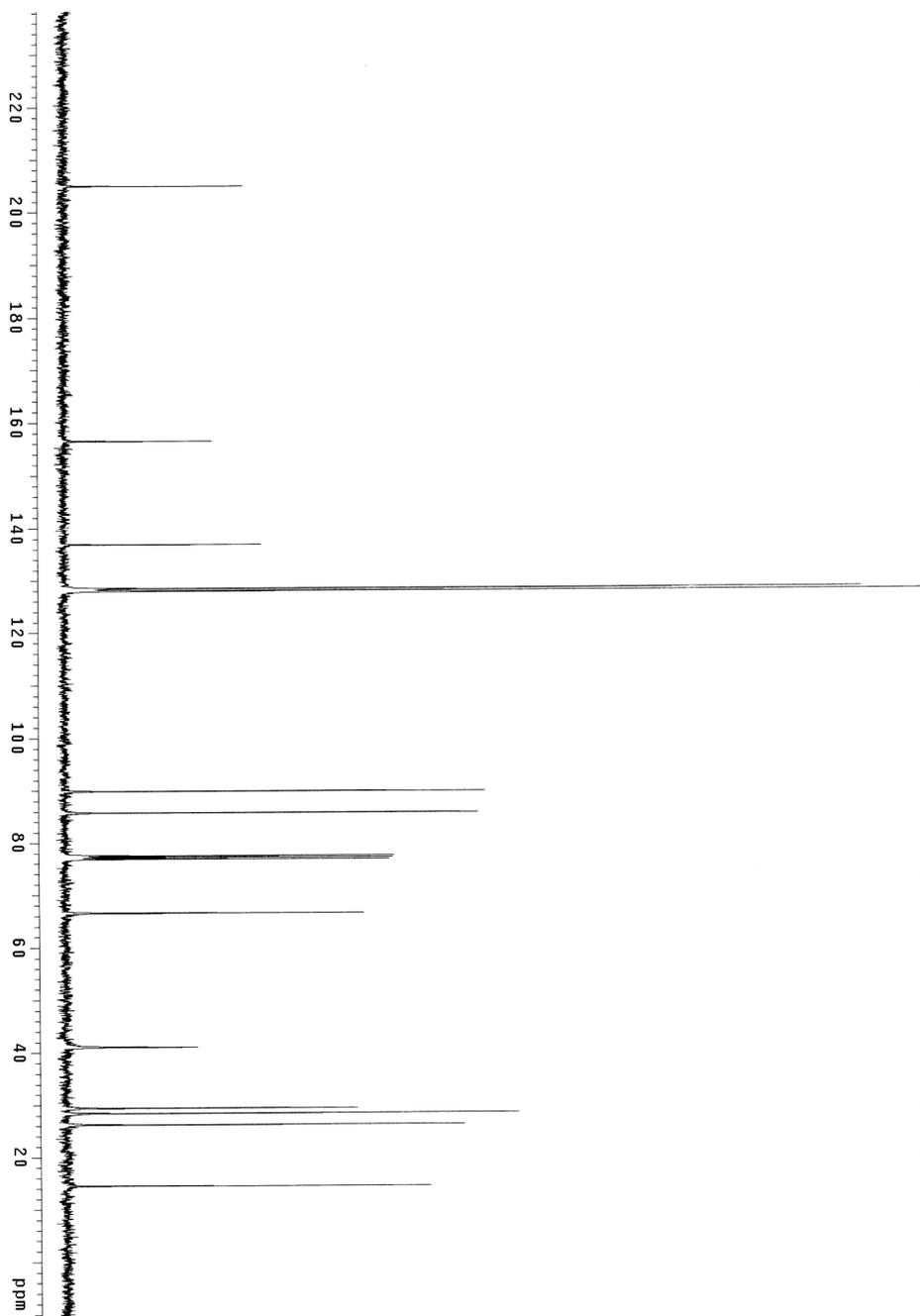


Figure S14. ^1H NMR spectrum of *tert*-butyl 4,4-diphenyl-2-vinyl-pyrrolidine-1-carboxylate.

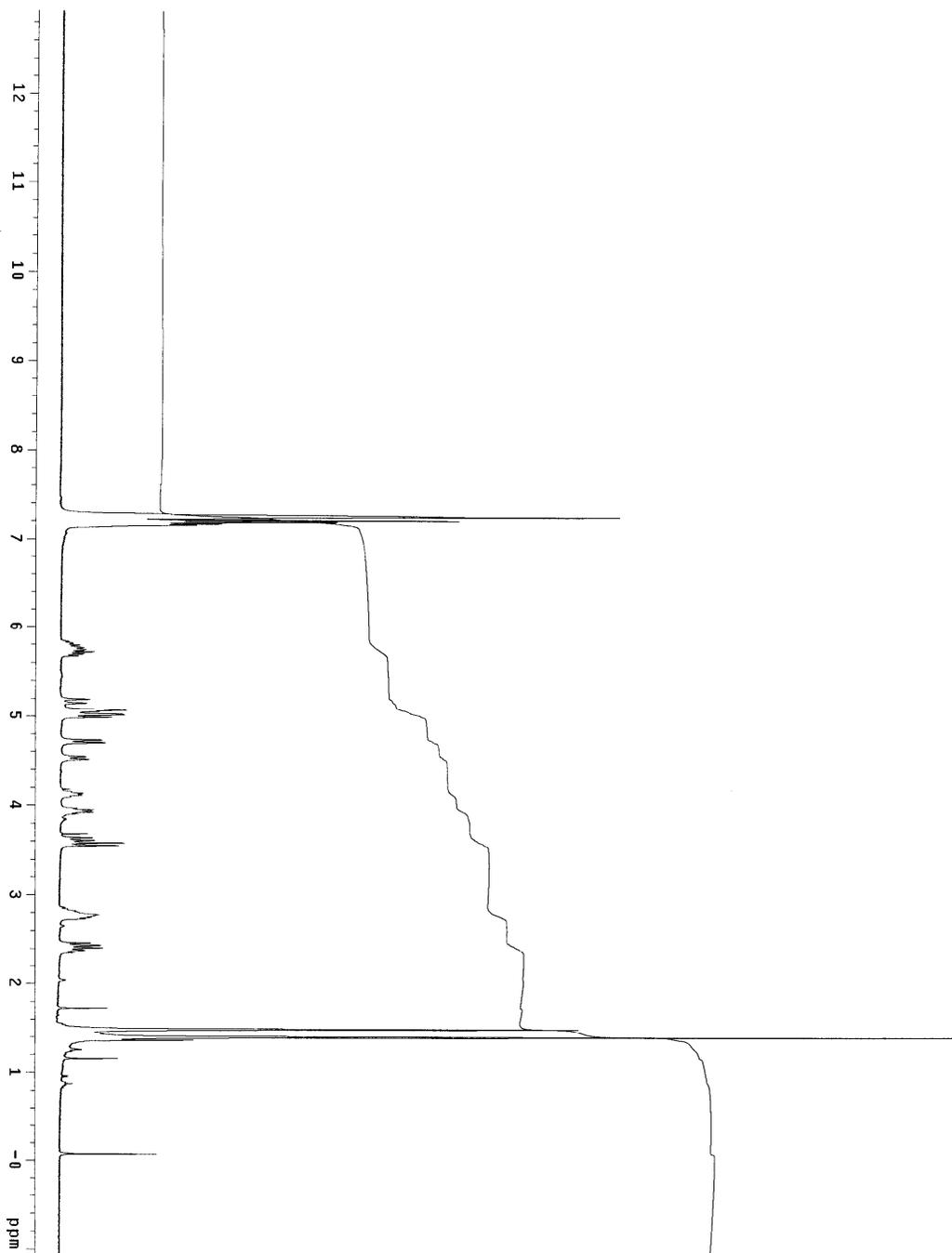


Figure S15. $^{13}\text{C}\{^1\text{H}\}$ NMR of *tert*-butyl 4,4-diphenyl-2-vinyl-pyrrolidine-1-carboxylate.

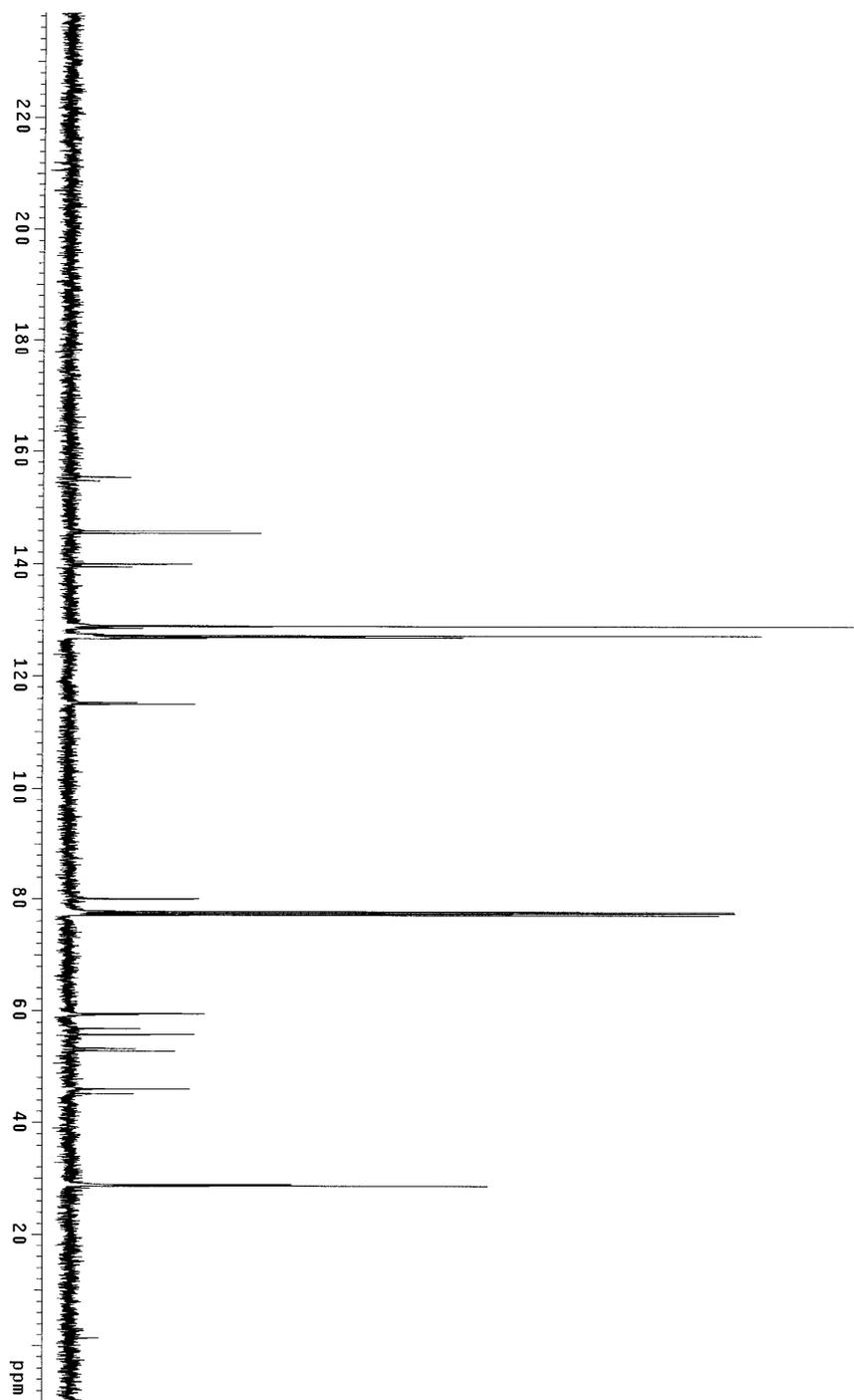


Figure S16. ^1H NMR spectrum for **S20** at 60 °C.

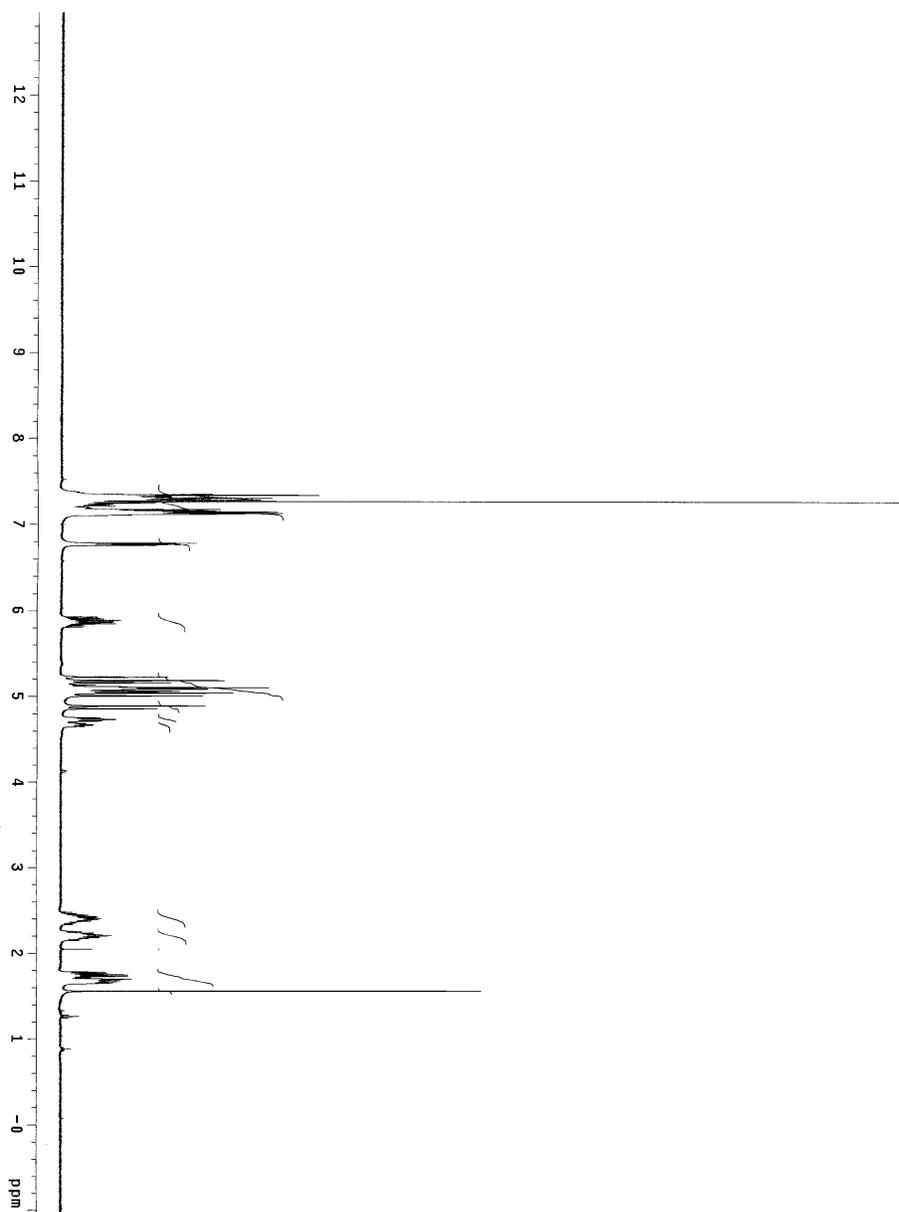


Figure S17. ^{13}C NMR spectrum for **S20** at 60 °C.

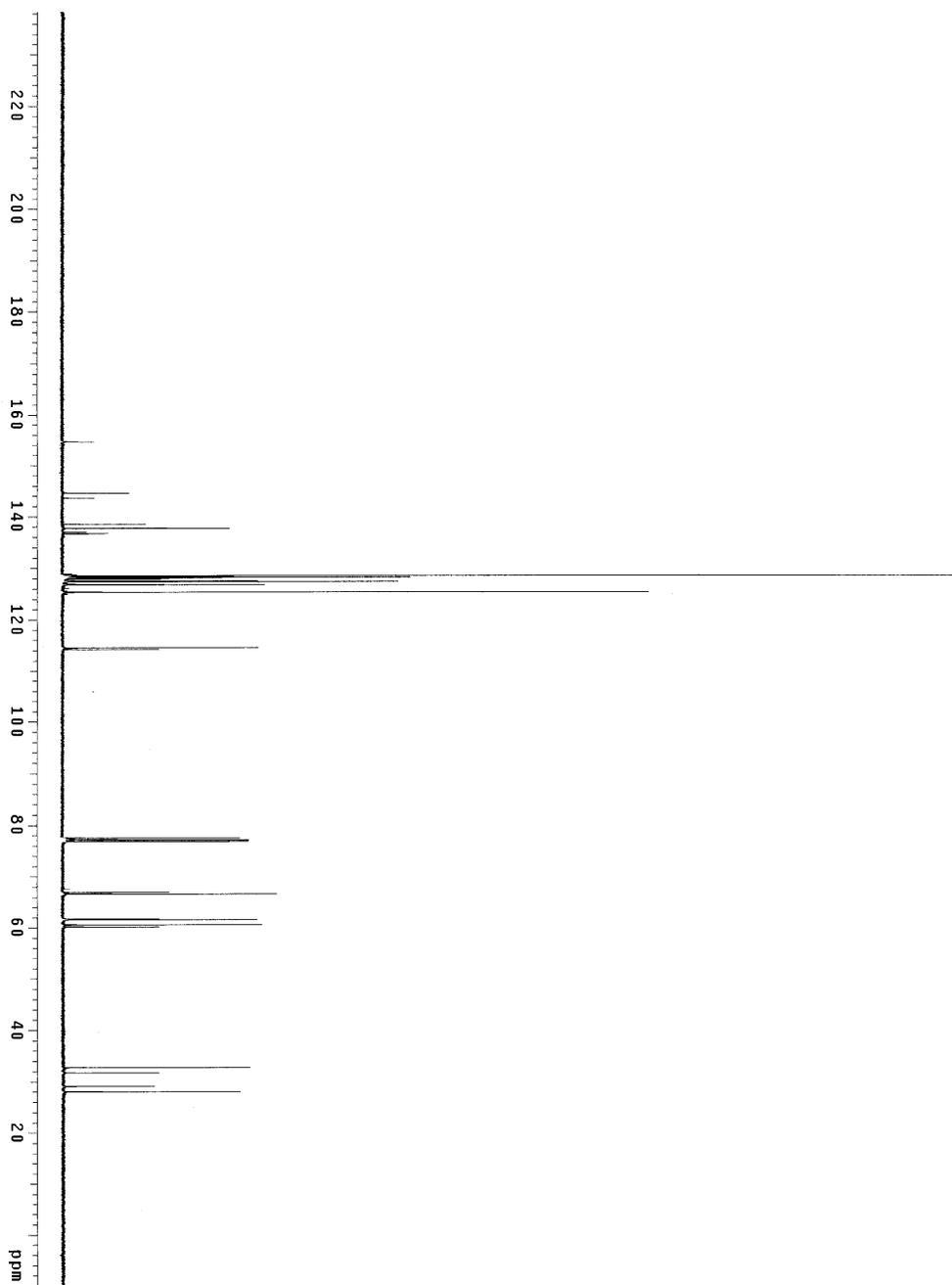


Figure S18. COSY NMR spectrum for *trans*-S20.

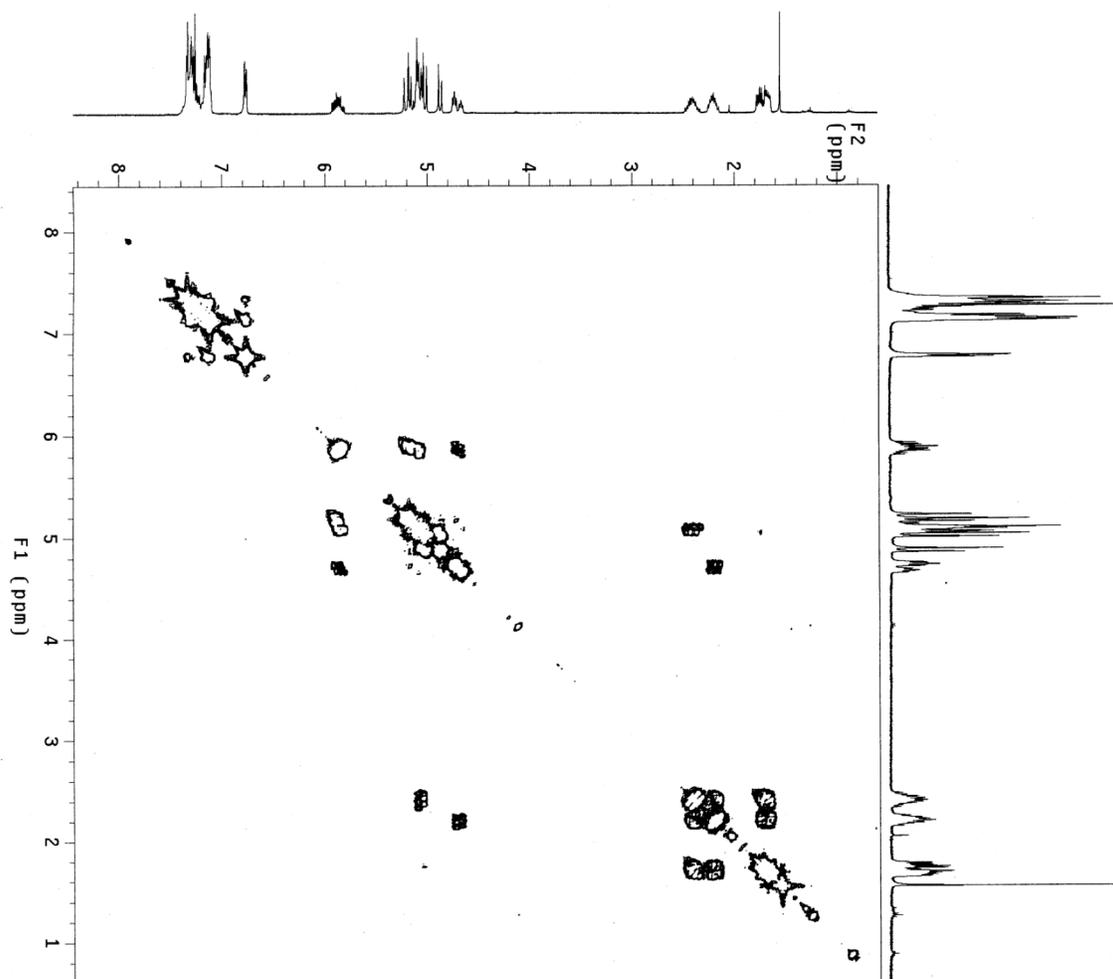


Figure S19. NOESY NMR spectrum for *trans*-S20.

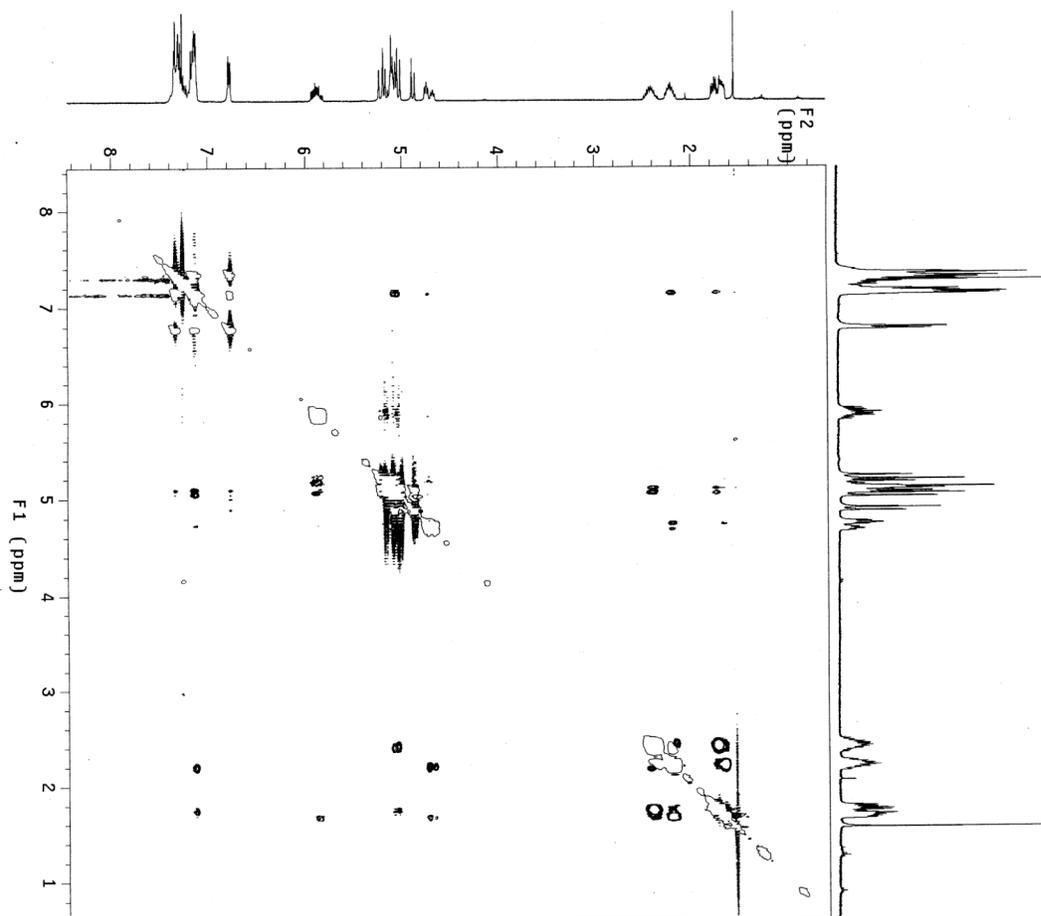


Figure S20. ^1H NMR spectrum of **S21**.

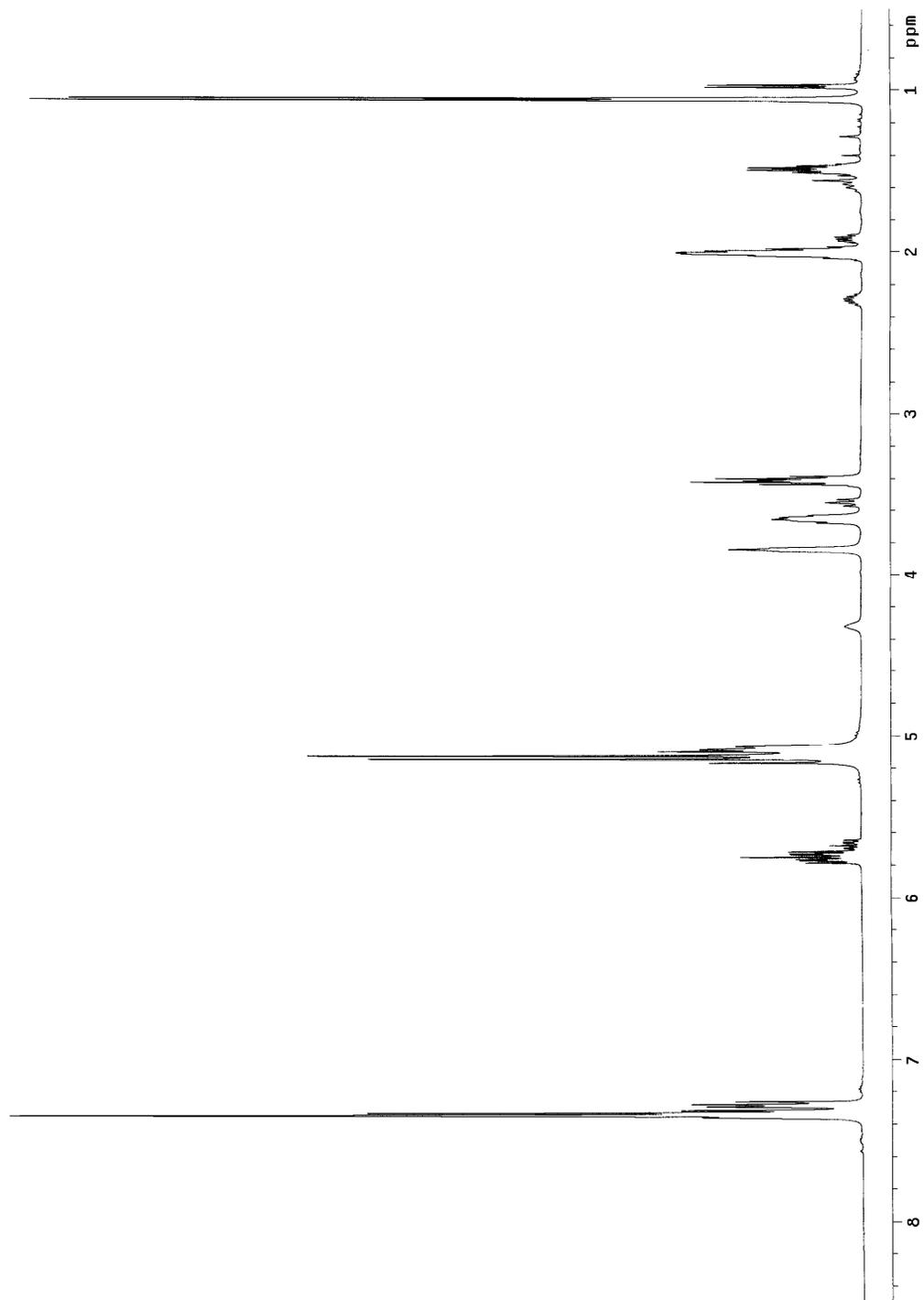


Figure S21. $^{13}\text{C}\{^1\text{H}\}$ NMR of S21.

