

Supporting Information

One-Pot Formation of Fluorescent γ -Lactams Having an α -Phosphorus Ylide Moiety through Three-Component $\alpha(\delta')$ -Michael Reaction of Phosphines with an Enyne and *N*-Tosyl Aldimines

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<u>Content</u>	<u>Page</u>
1. Spectral data (^1H and ^{13}C NMR spectra) of compounds 4a-p	2—33
2. UV-vis absorption spectra of compounds 4a-p	34—35

Figure S1. ^1H NMR spectrum of compound **4a** (600 MHz, CDCl_3)

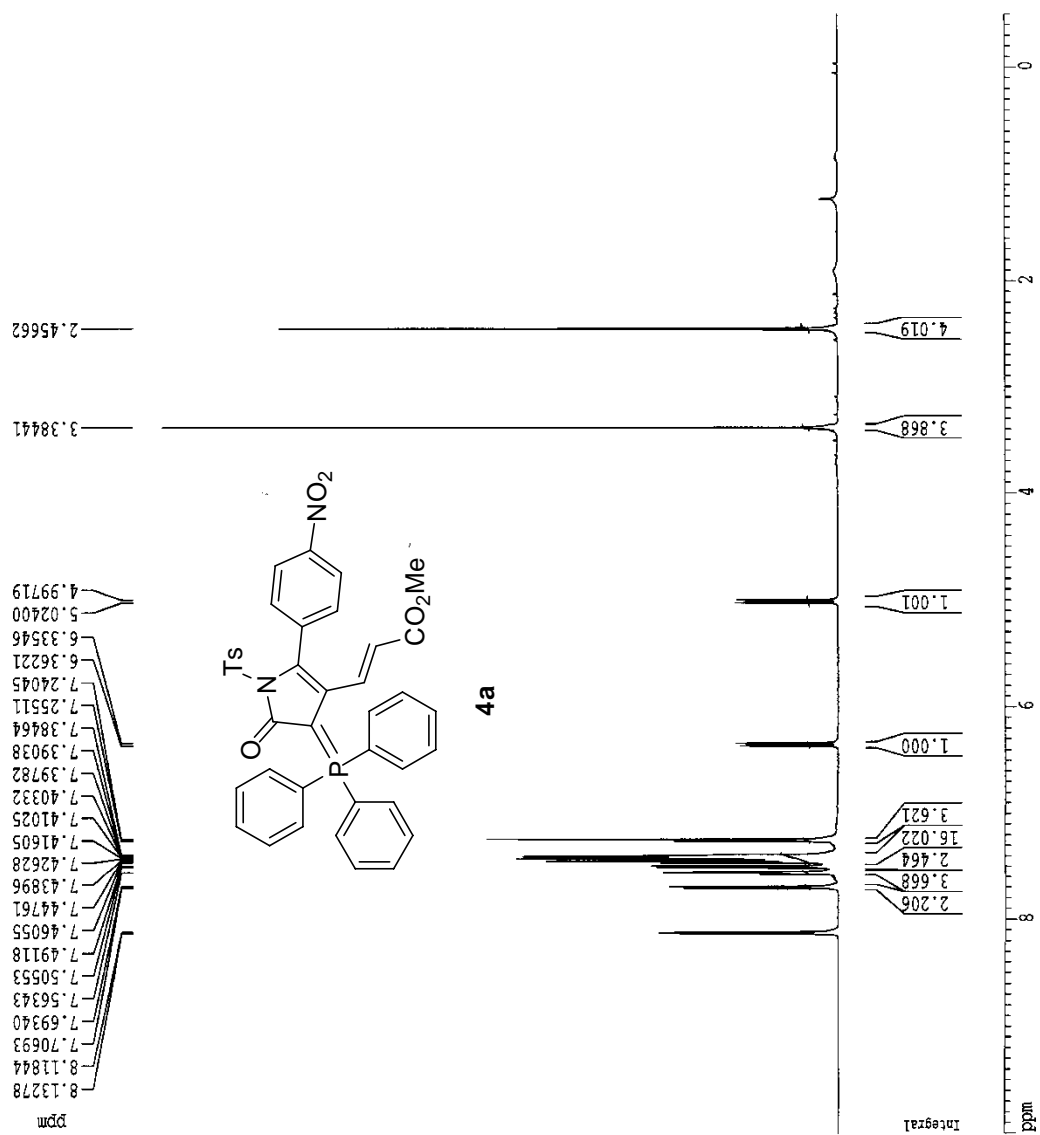


Figure S2. ^{13}C NMR spectrum of compound **4a** (150 MHz, CDCl_3)

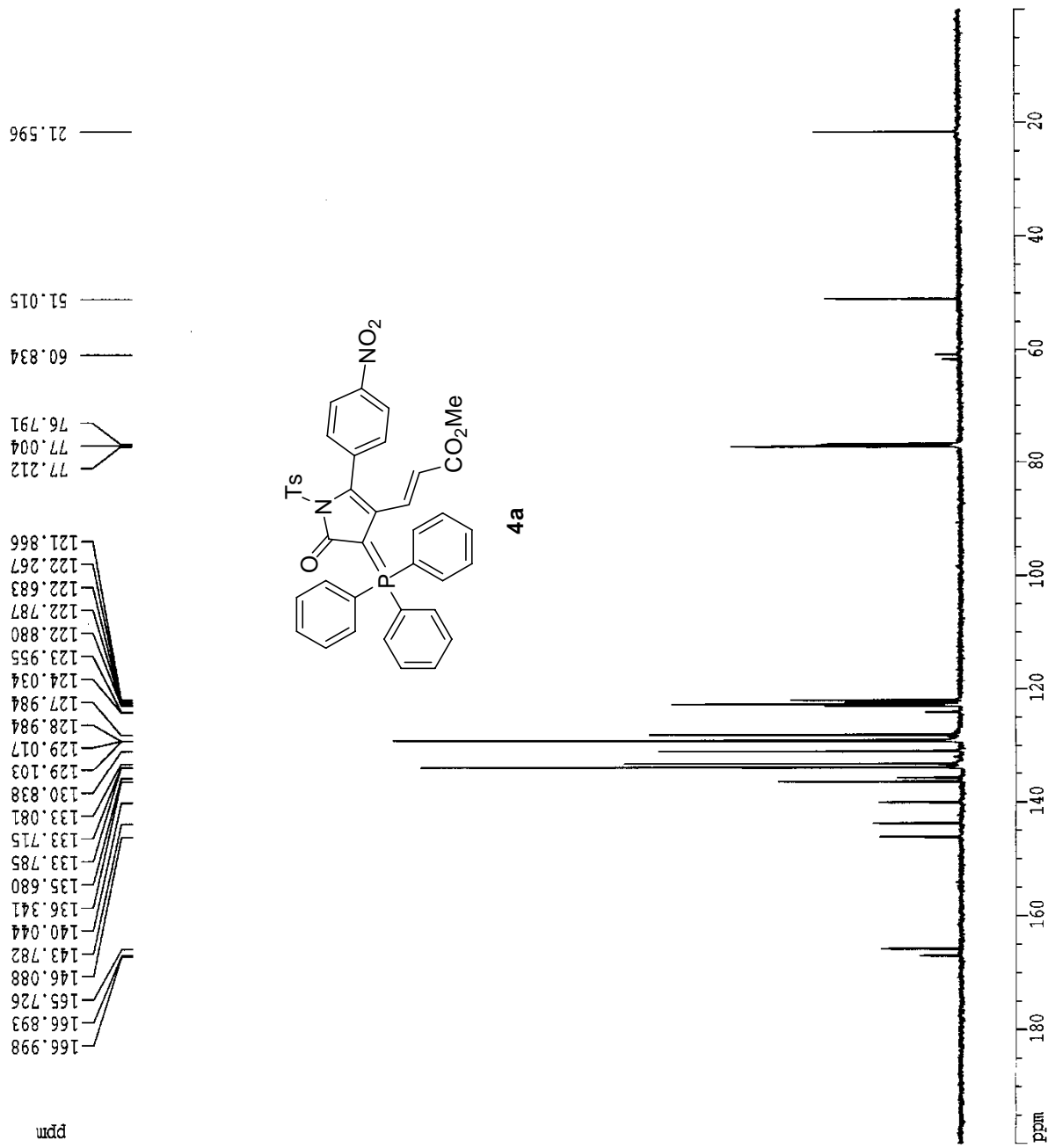


Figure S3. ^1H NMR spectrum of compound **4b** (500 MHz, CDCl_3)

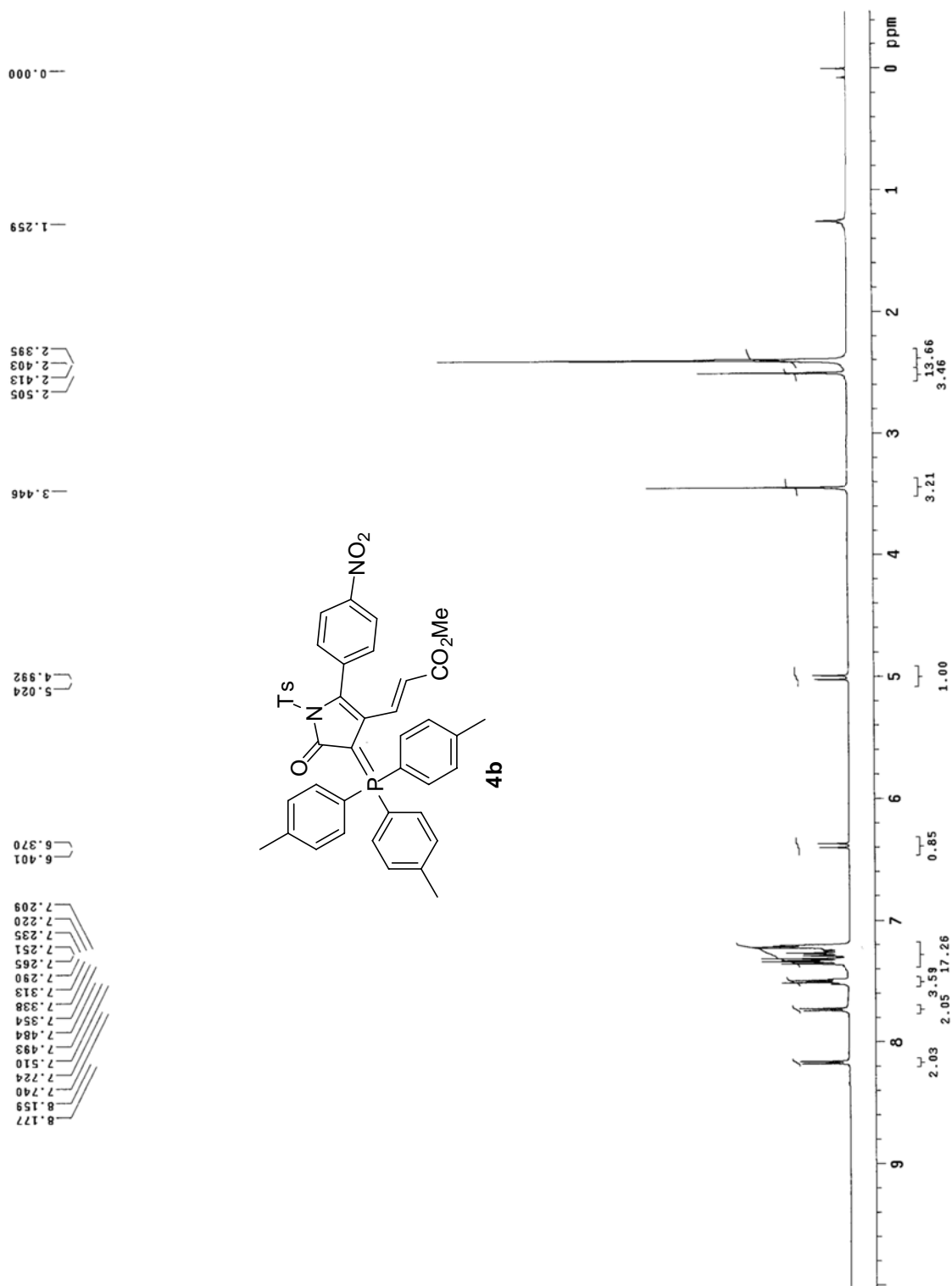


Figure S4. ^{13}C NMR spectrum of compound **4b** (125 MHz, CDCl_3)

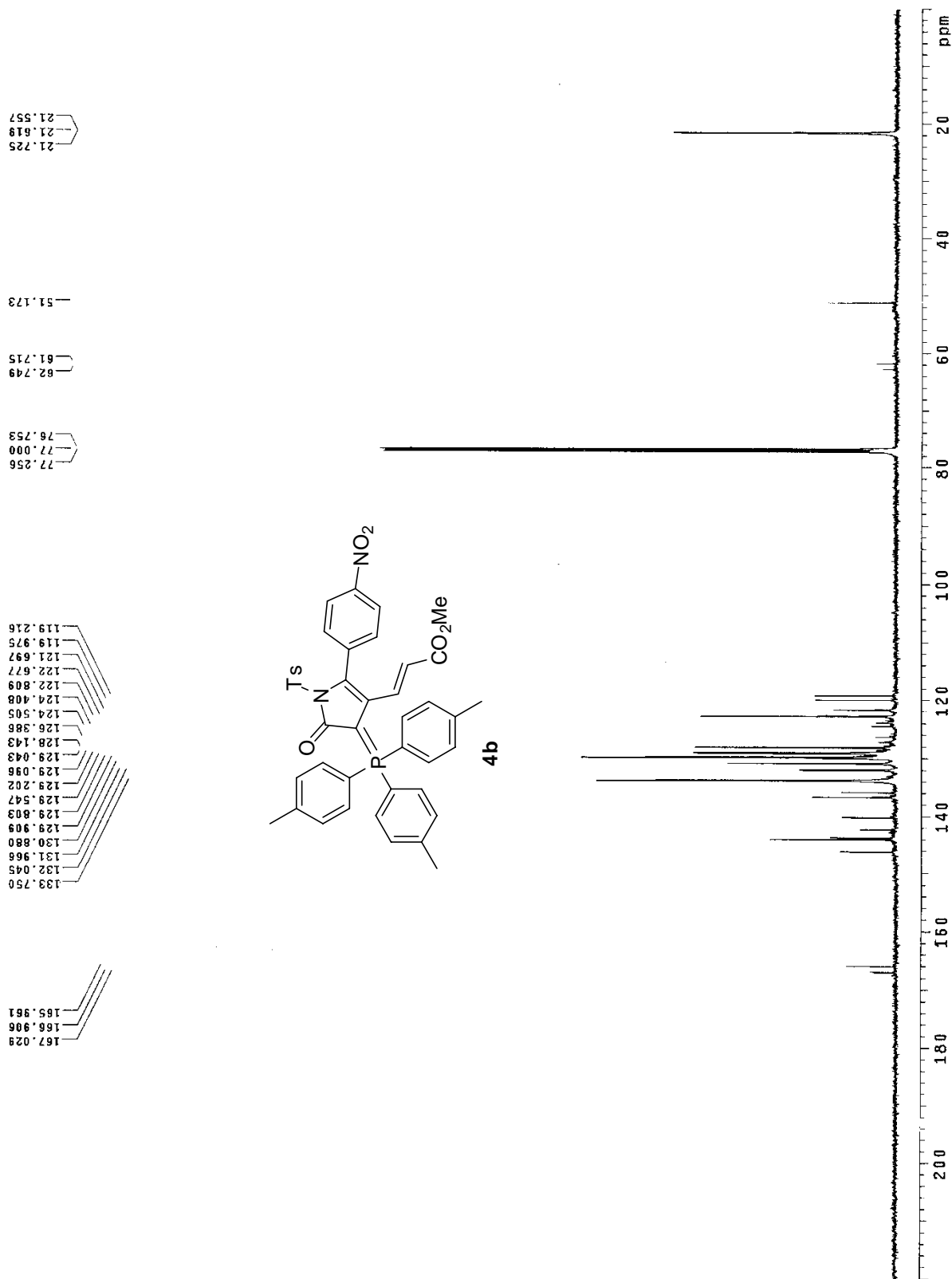


Figure S5. ^1H NMR spectrum of compound **4c** (300 MHz, CDCl_3)

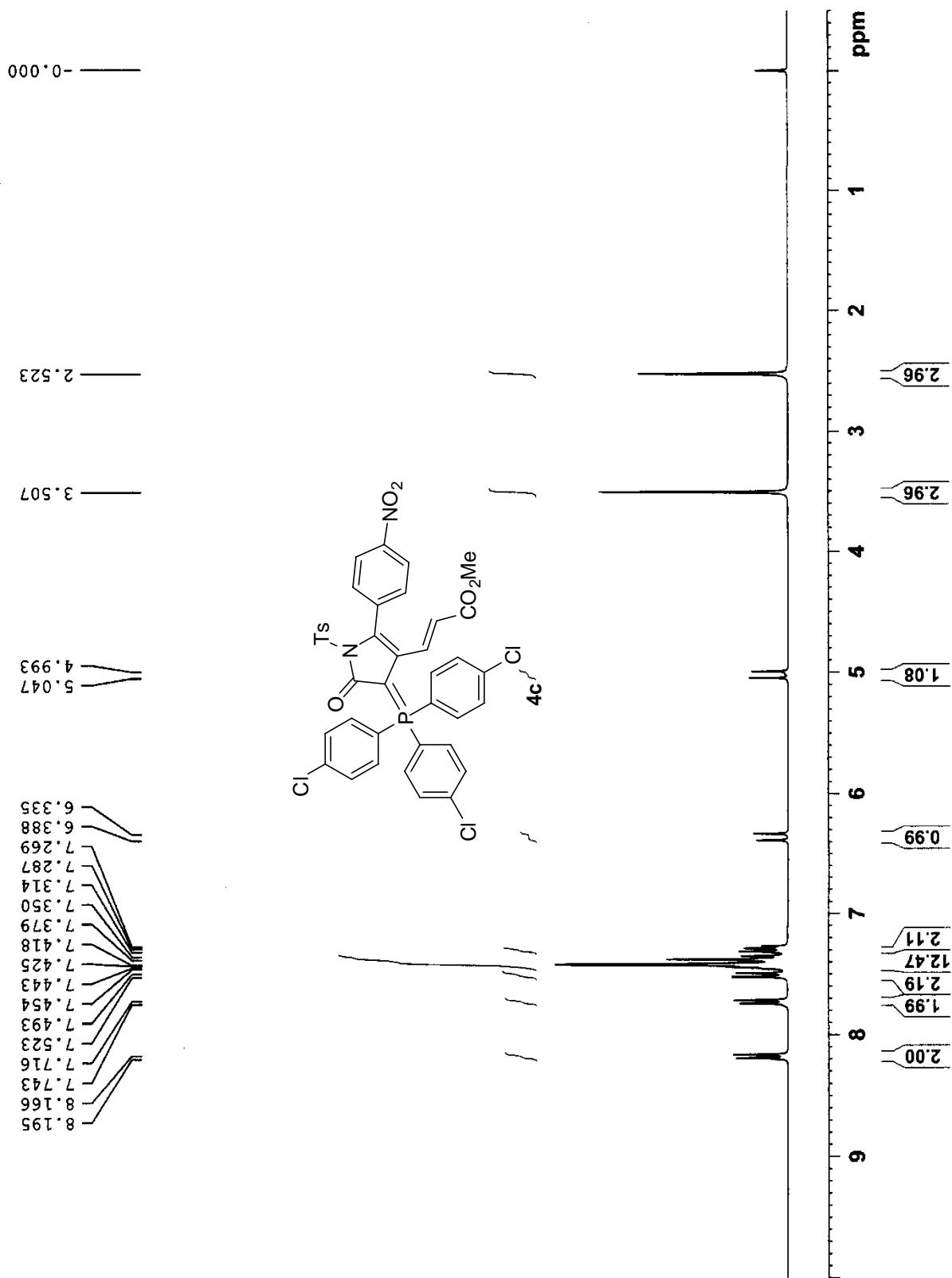


Figure S6. ^{13}C NMR spectrum of compound **4c** (100 MHz, CDCl_3)

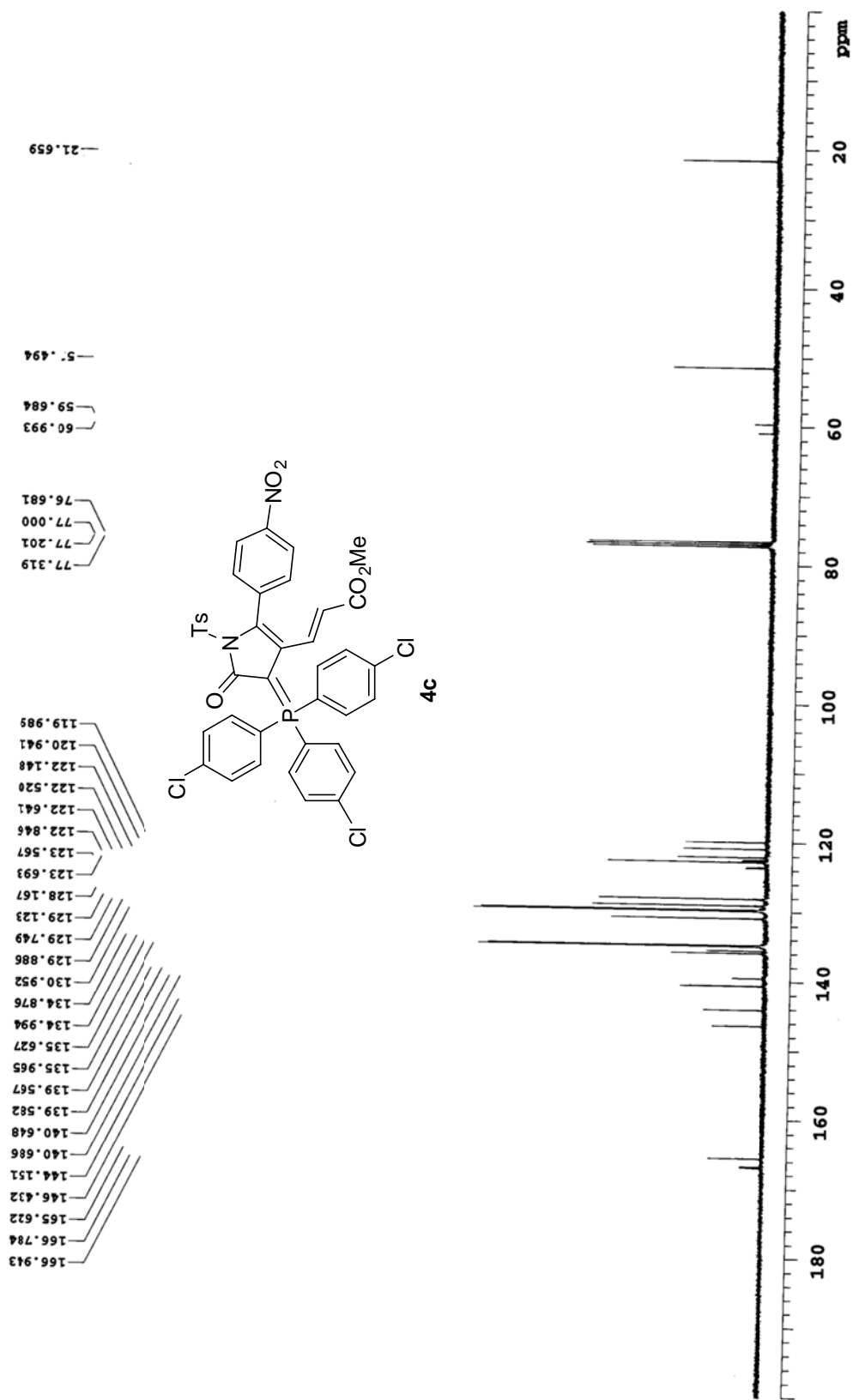


Figure S7. ¹H NMR spectrum of compound **4d** (500 MHz, CDCl₃)

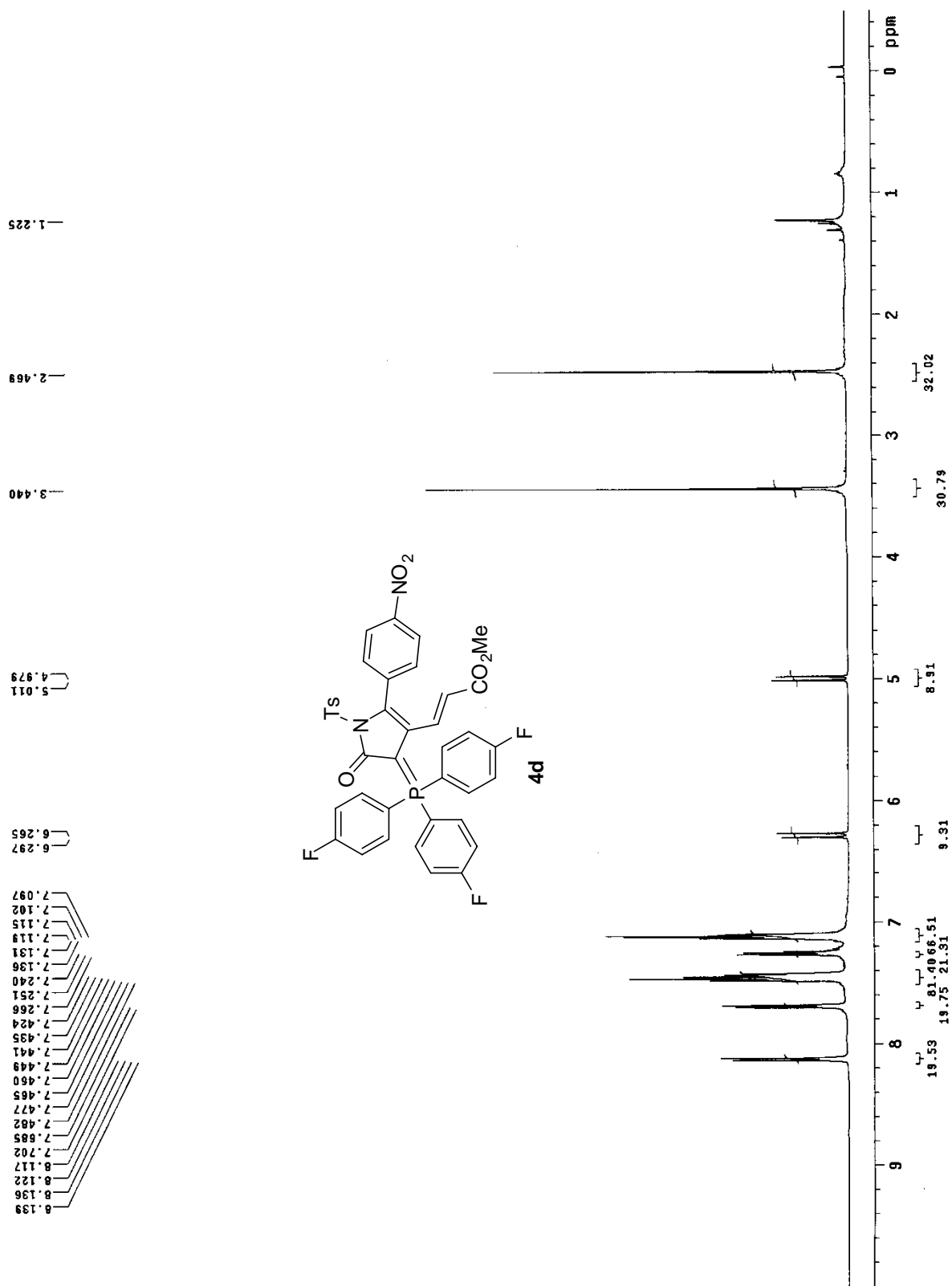


Figure S8. ^{13}C NMR spectrum of compound **4d** (125 MHz, CDCl_3)

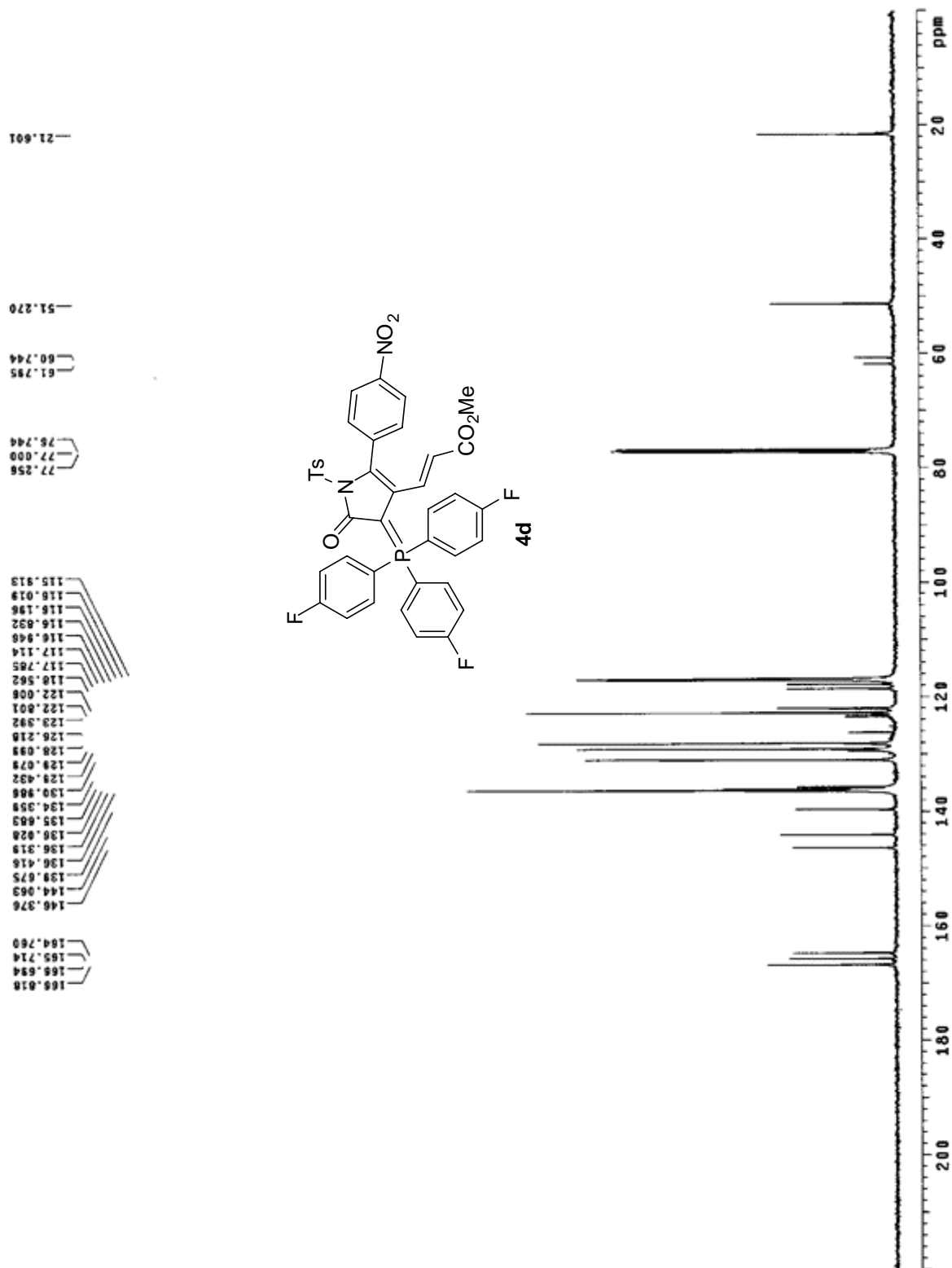


Figure S9. ^1H NMR spectrum of compound **4e** (300 MHz, CDCl_3)

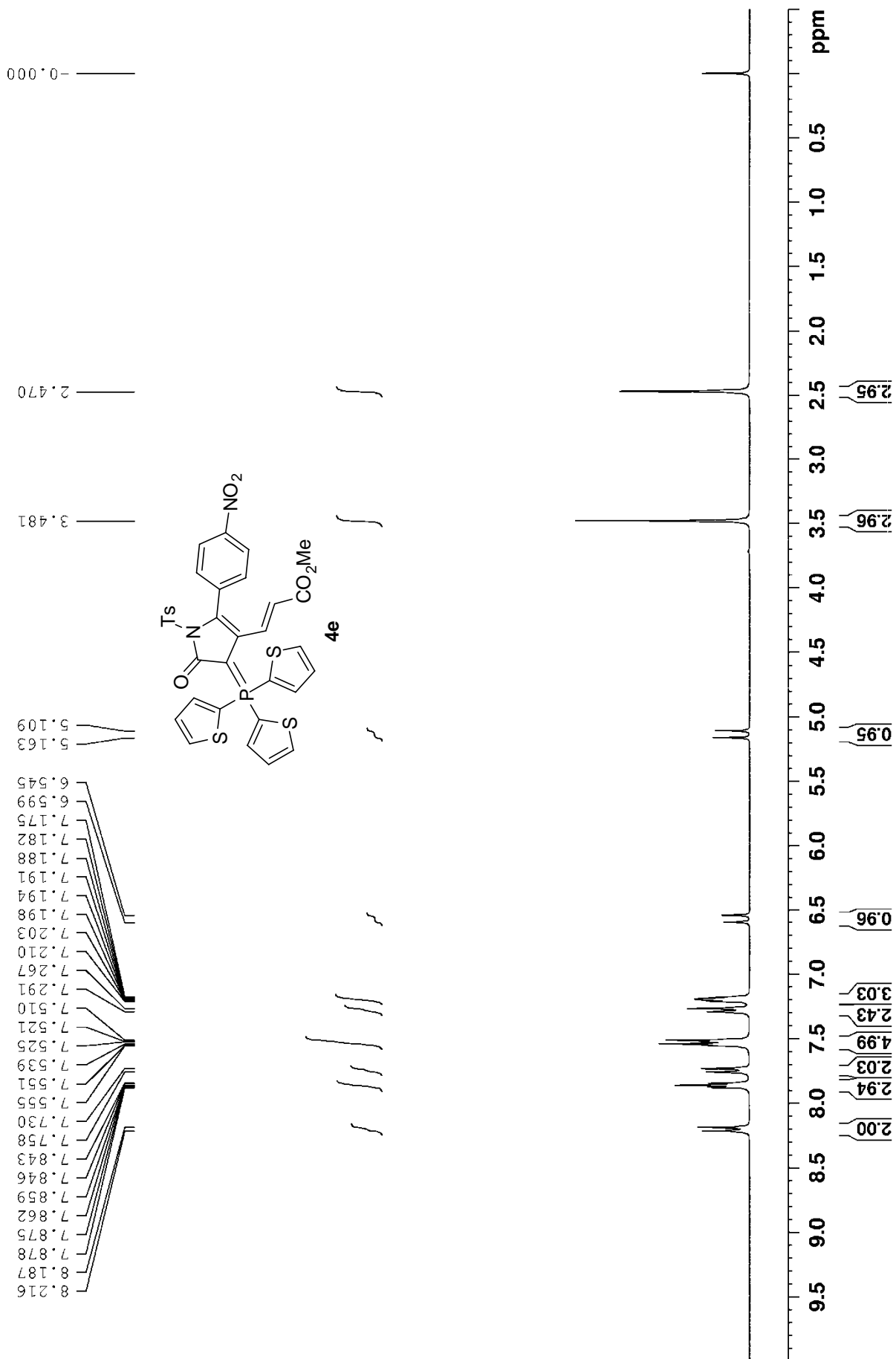


Figure S10. ^{13}C NMR spectrum of compound **4e** (75 MHz, CDCl_3)

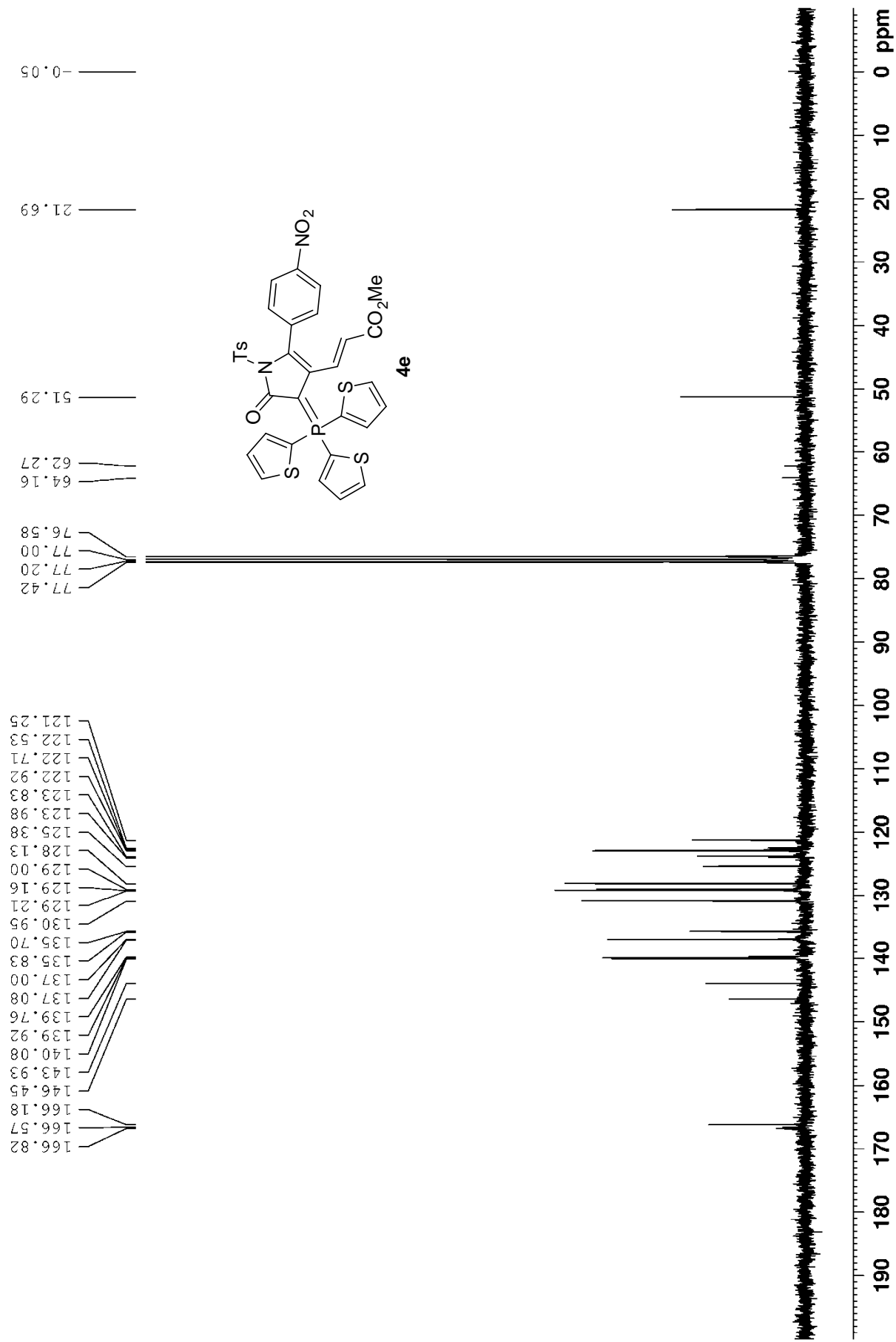


Figure S11. ¹H NMR spectrum of compound **4f** (300 MHz, CDCl₃)

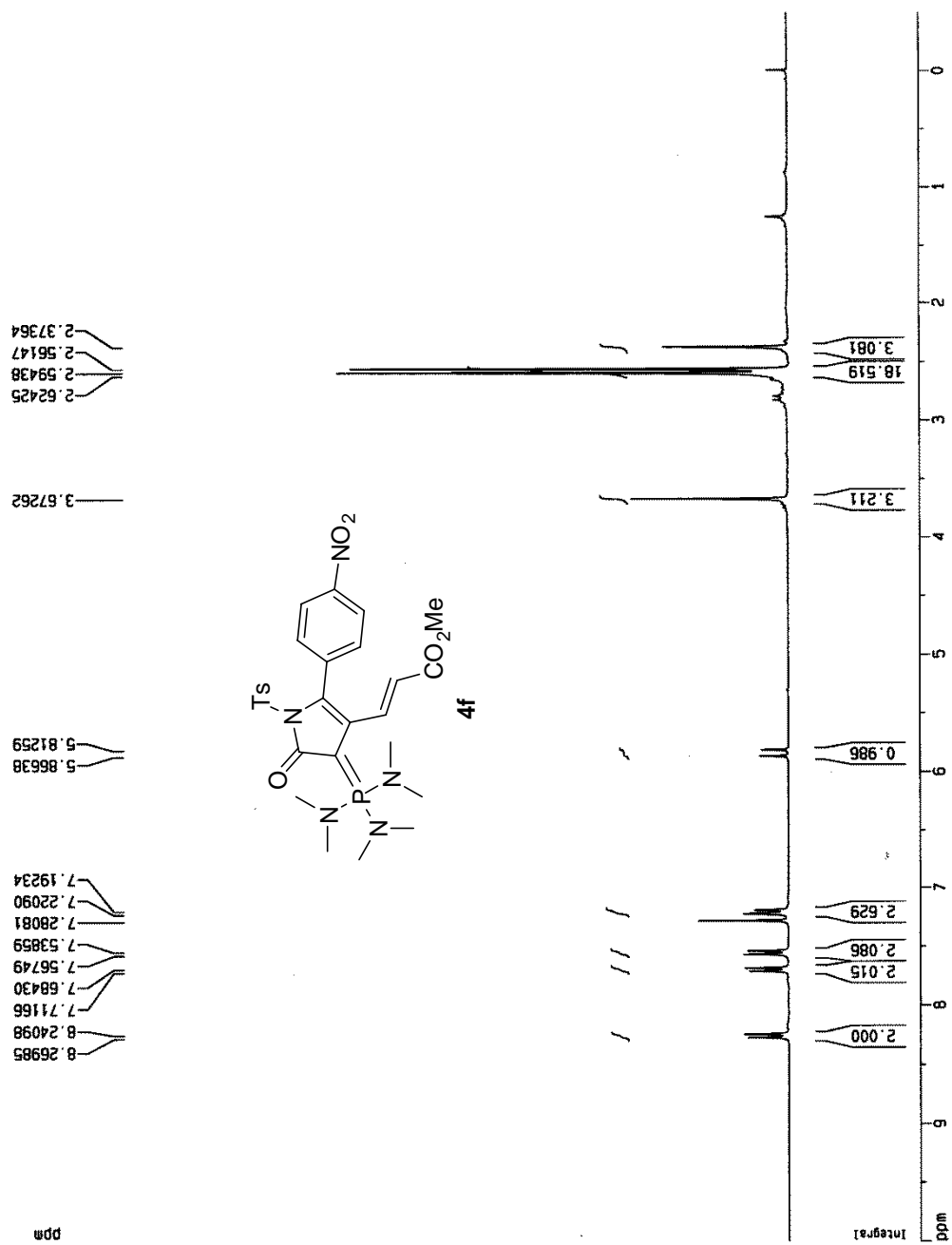


Figure S12. ^{13}C NMR spectrum of compound **4f** (75 MHz, CDCl_3)

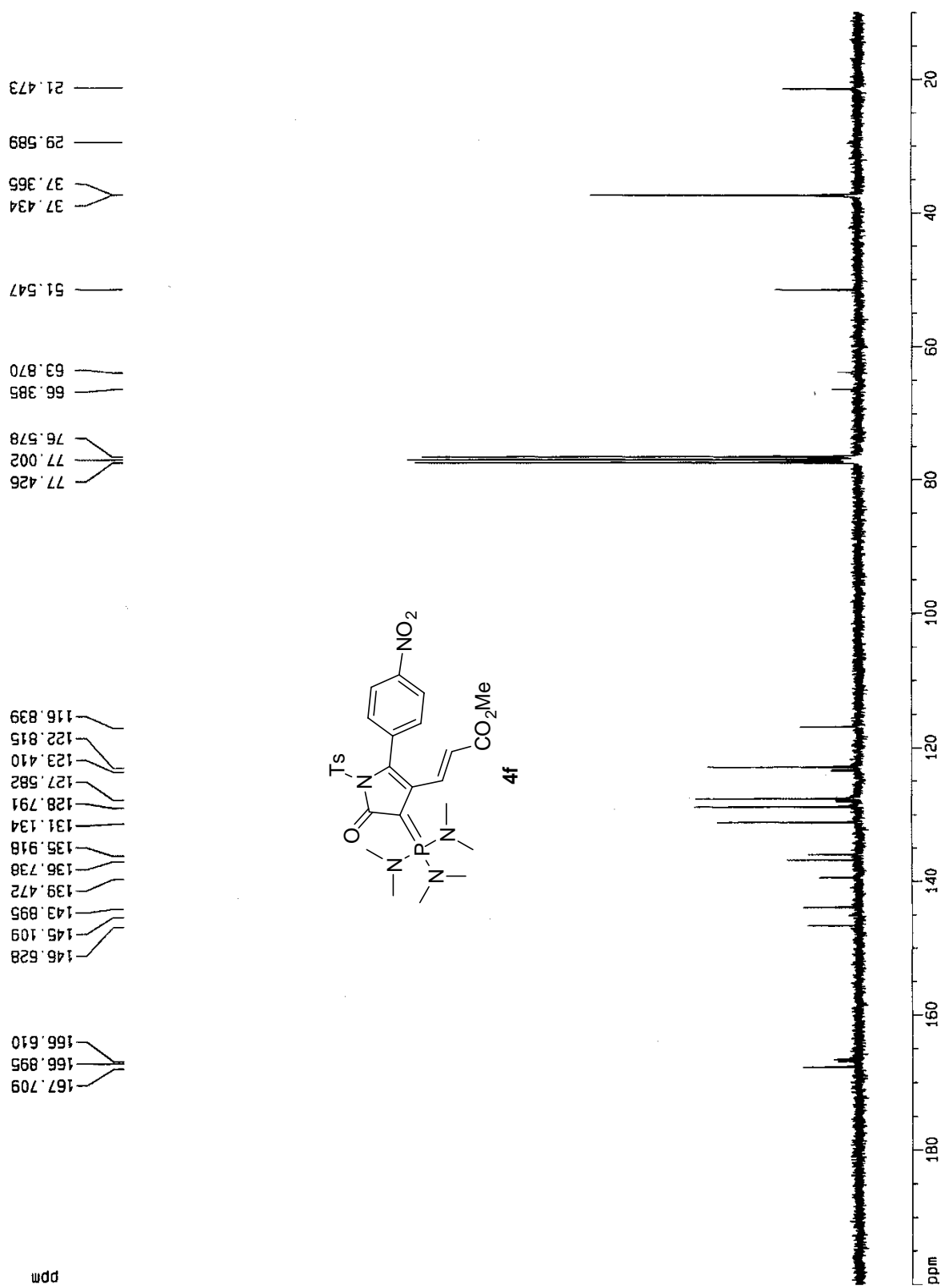


Figure S13. ^1H NMR spectrum of compound **4g** (300 MHz, CDCl_3)

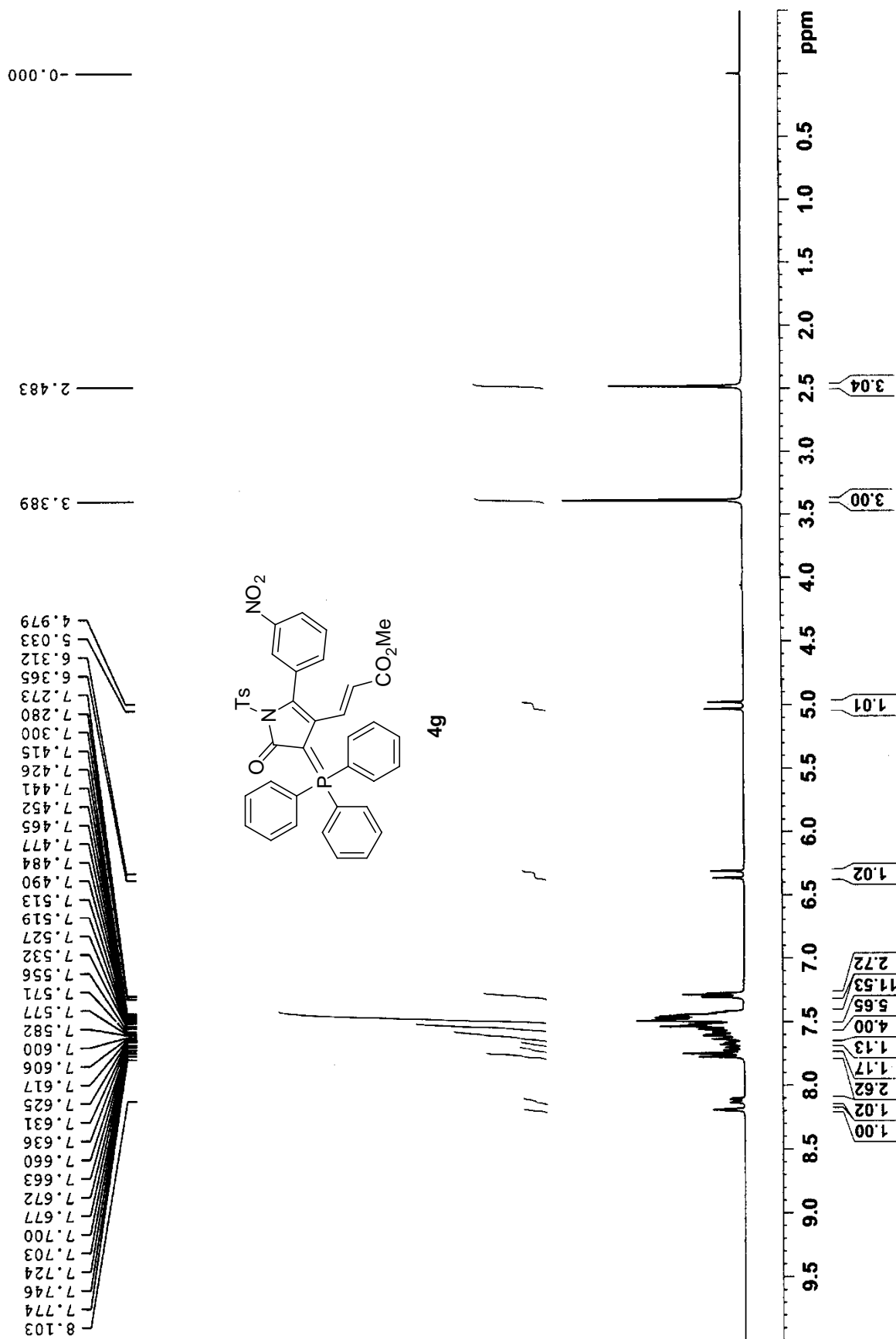


Figure S14. ^{13}C NMR spectrum of compound **4g** (75 MHz, CDCl_3)

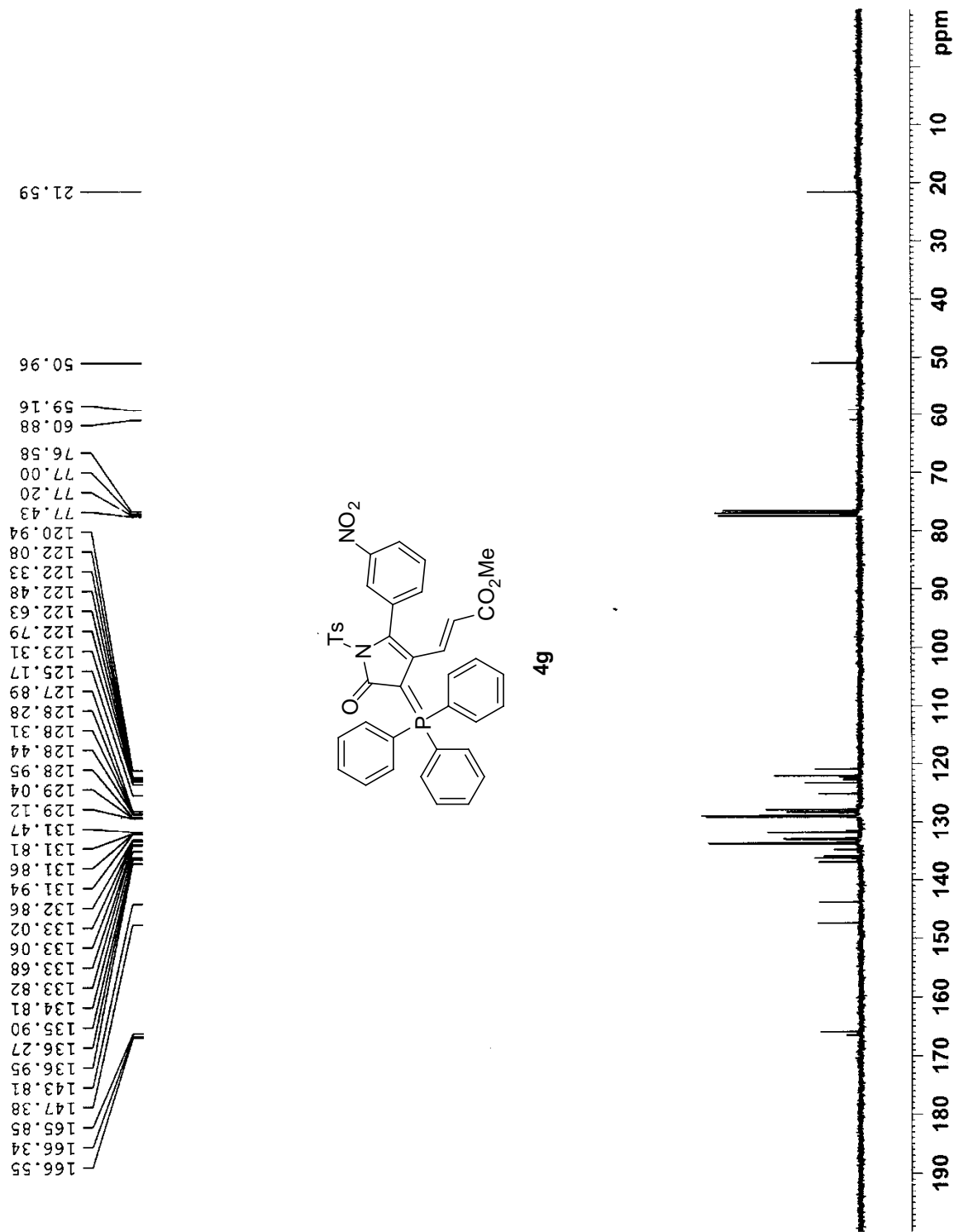


Figure S15. ¹H NMR spectrum of compound **4h** (500 MHz, CDCl₃)

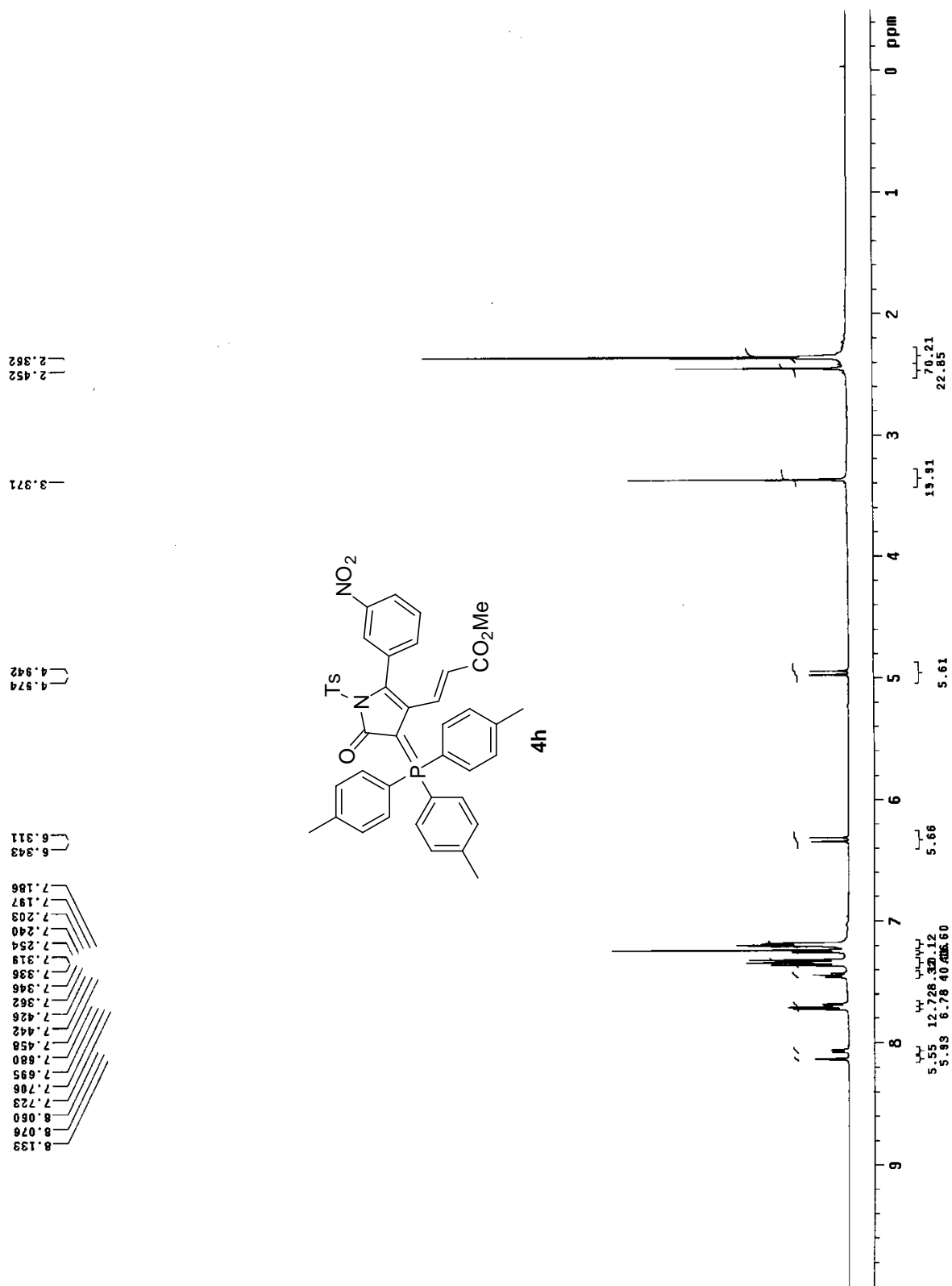


Figure S16. ^{13}C NMR spectrum of compound **4h** (125 MHz, CDCl_3)

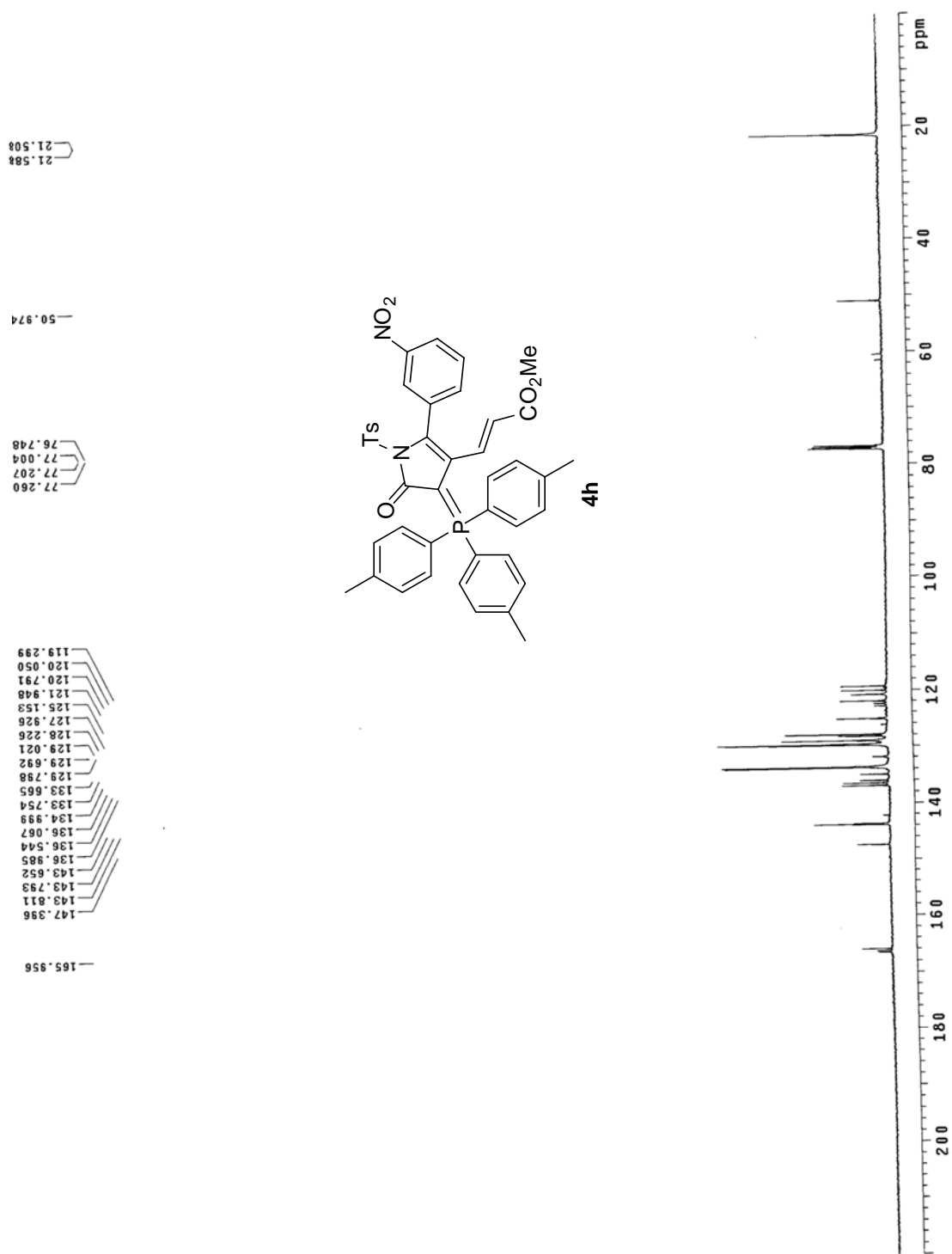


Figure S17. ¹H NMR spectrum of compound **4i** (400 MHz, CDCl₃)

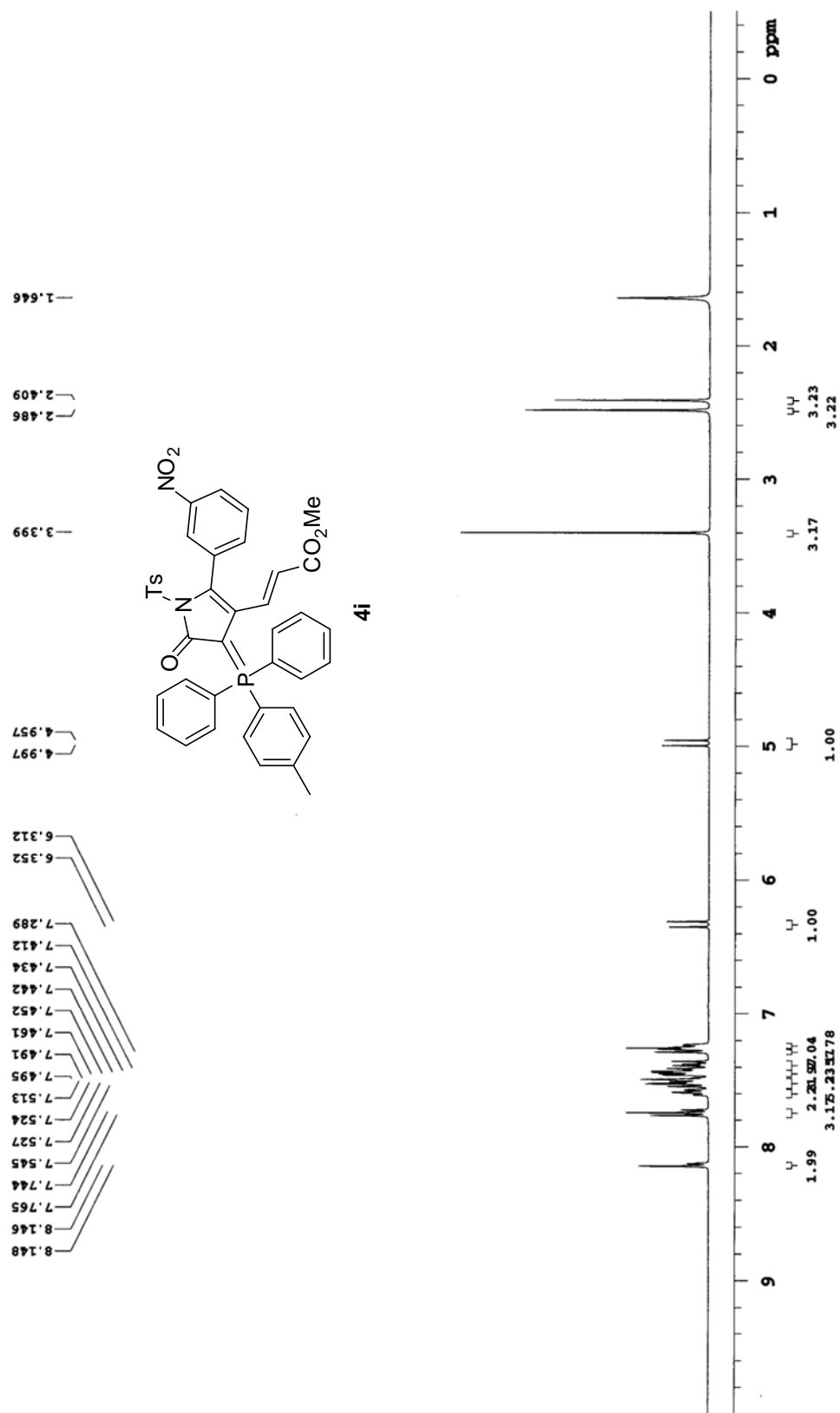


Figure S18. ^{13}C NMR spectrum of compound **4i** (75 MHz, CDCl_3)

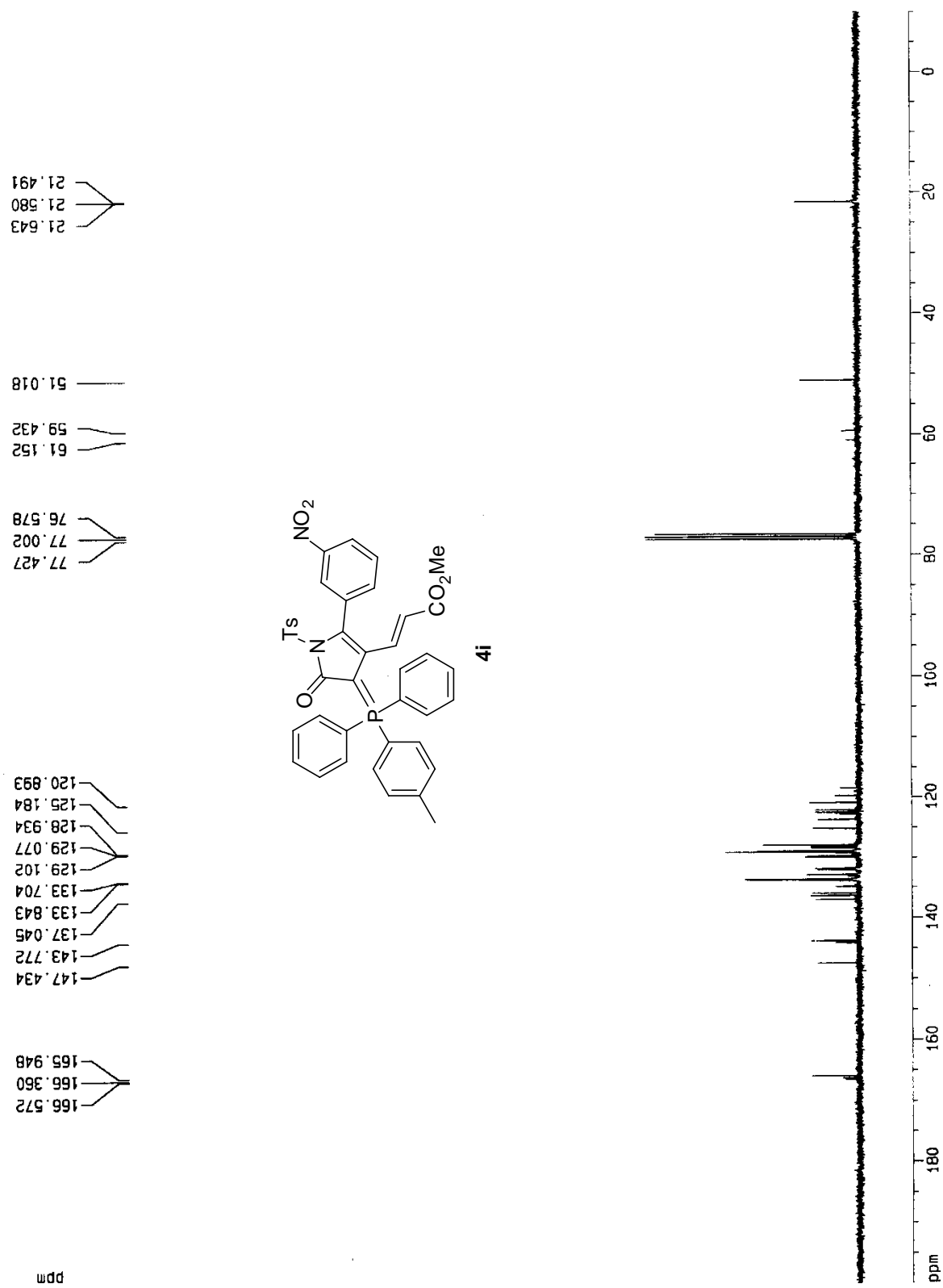


Figure S19. ^1H NMR spectrum of compound **4j** (300 MHz, CDCl_3)

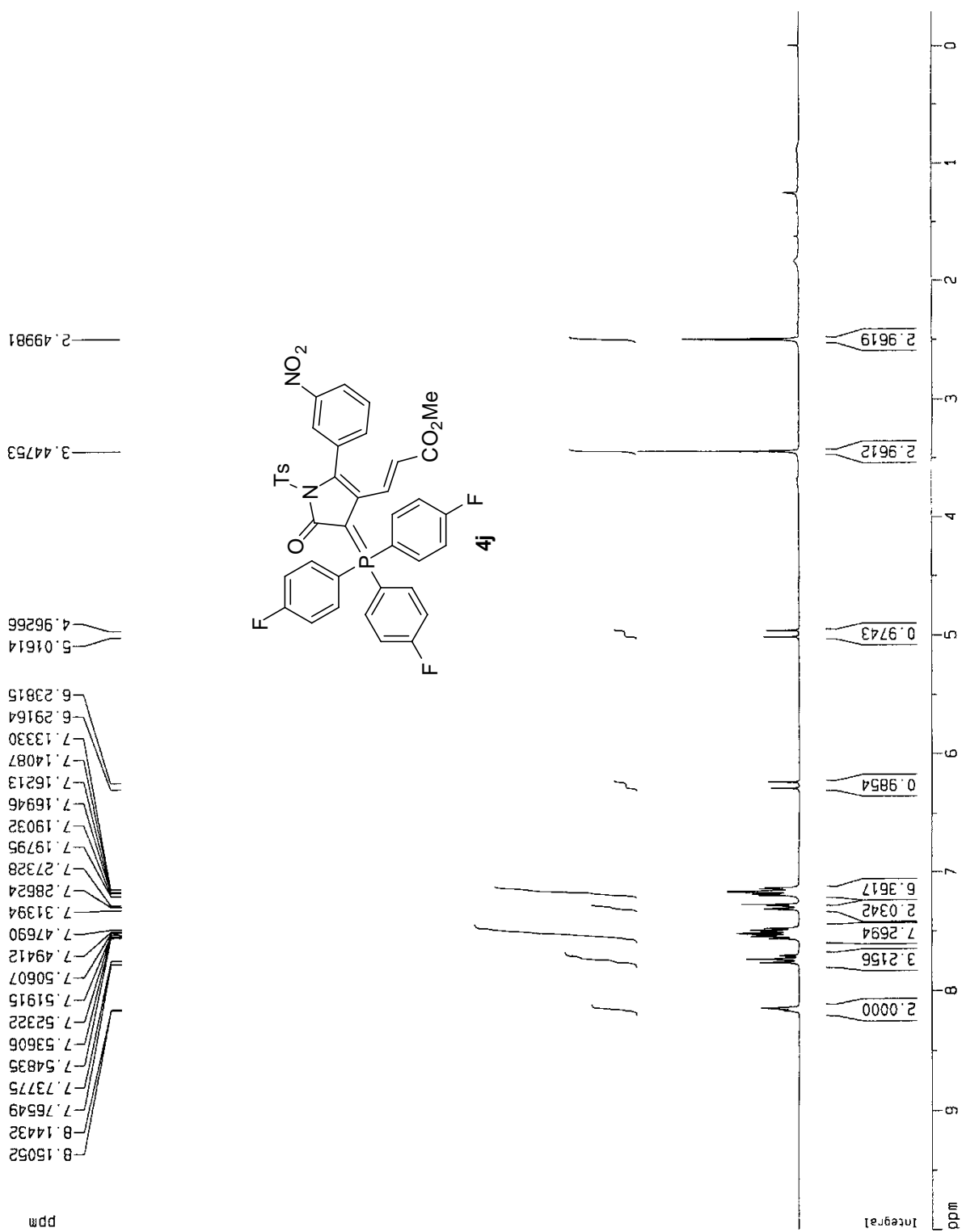


Figure S20. ^{13}C NMR spectrum of compound 4j (75 MHz, CDCl_3)

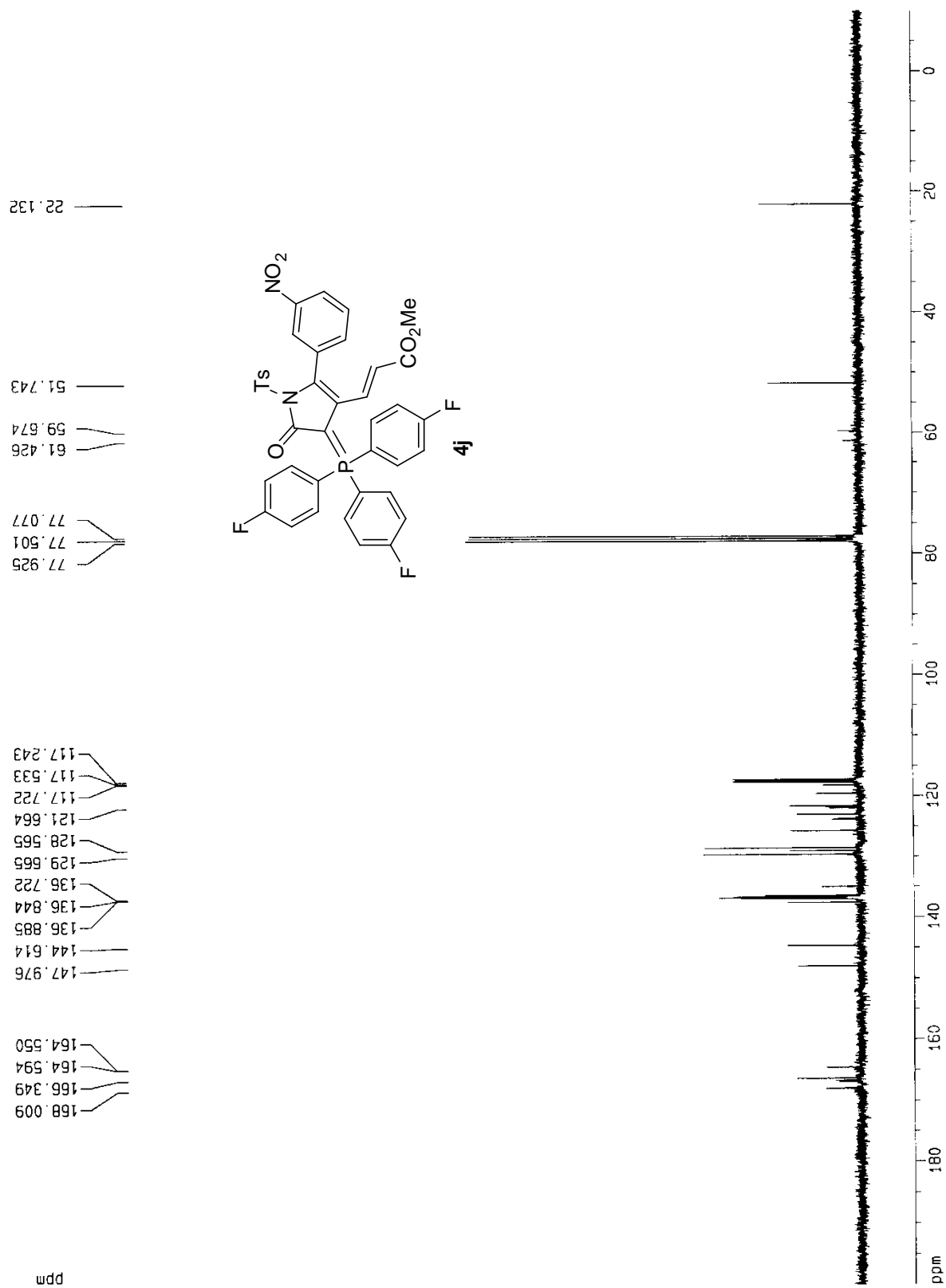


Figure S21. ¹H NMR spectrum of compound **4k** (300 MHz, CDCl₃)

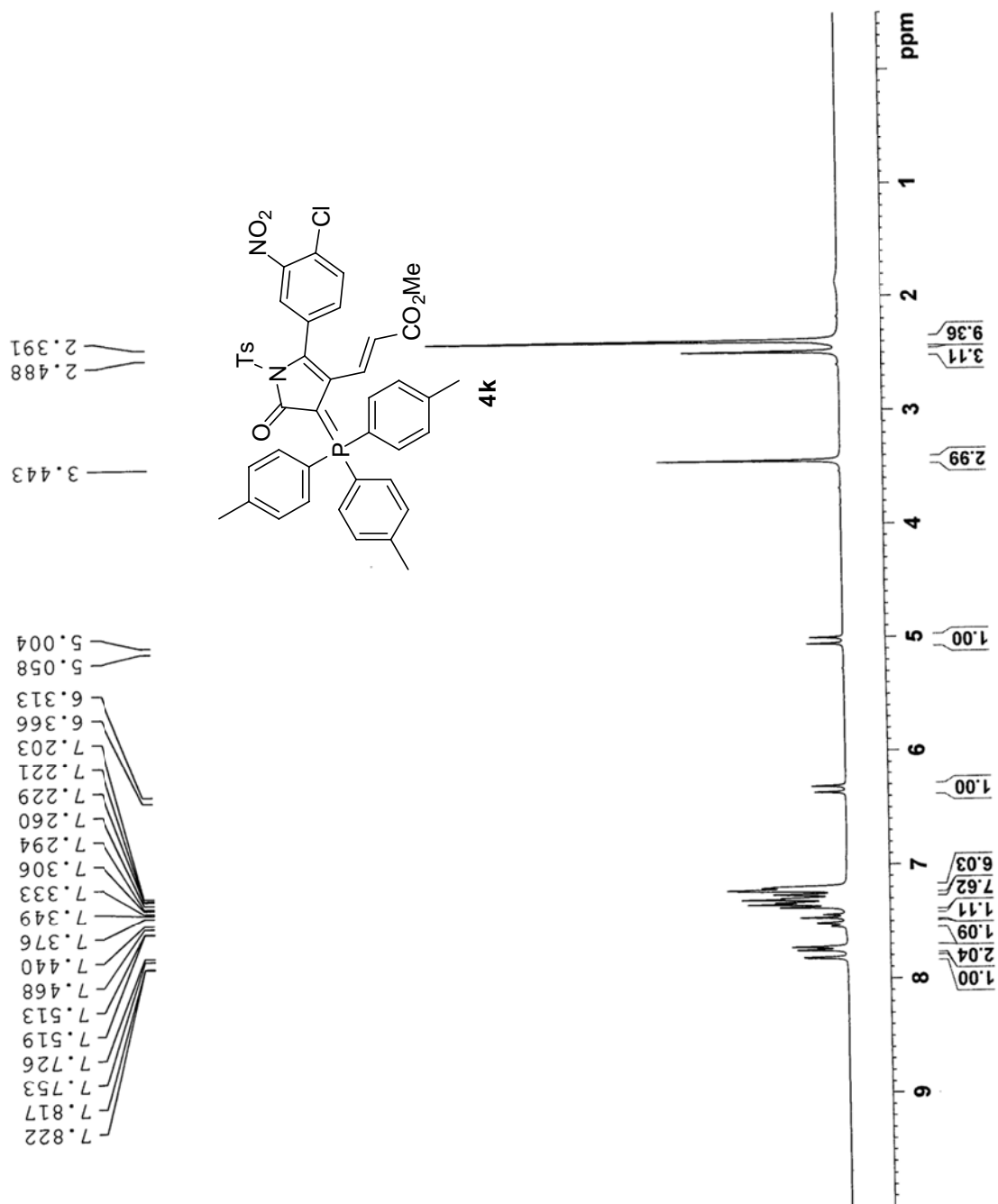


Figure S22. ^{13}C NMR spectrum of compound **4k** (100 MHz,
 CDCl_3)

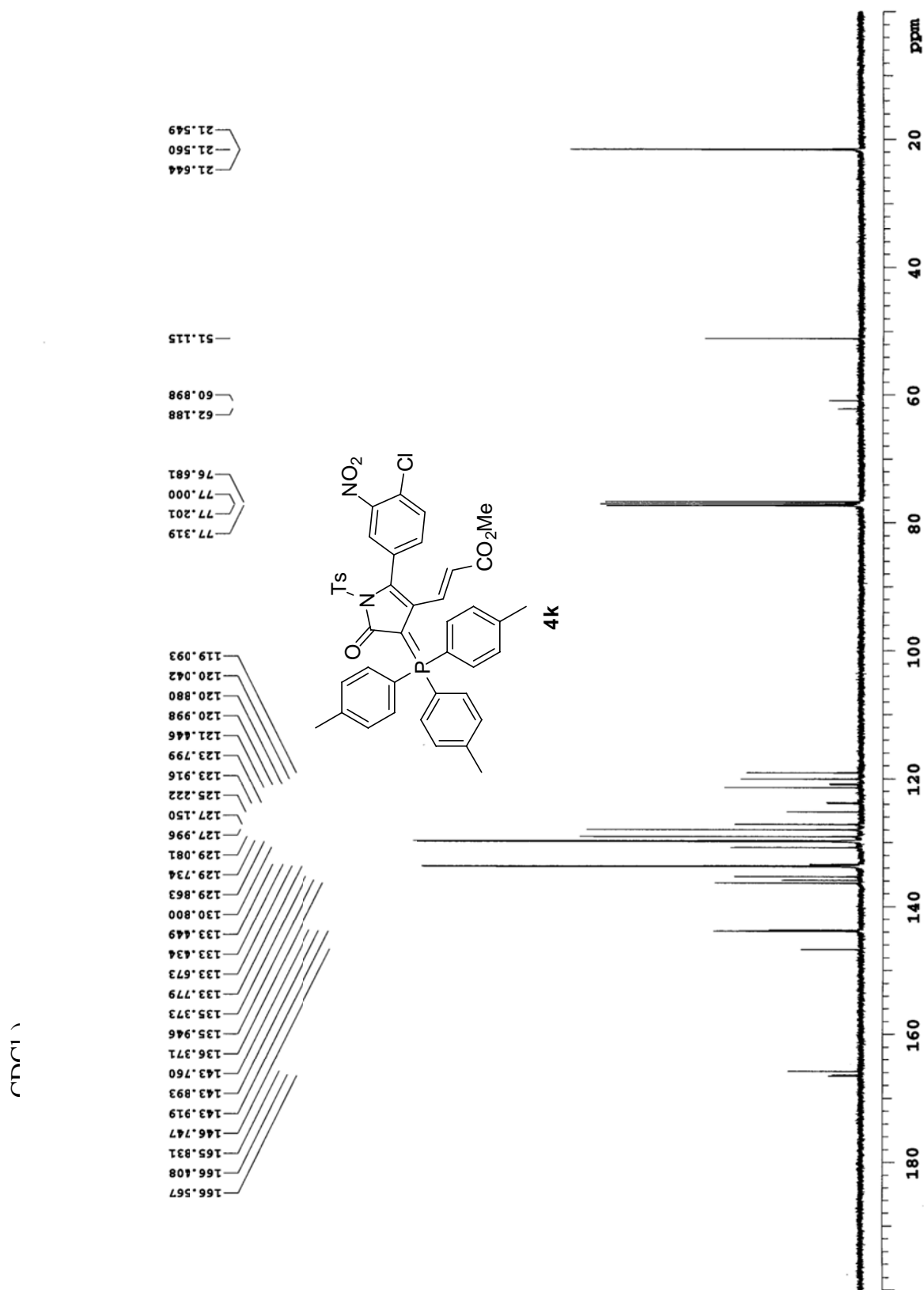


Figure S23. ^1H NMR spectrum of compound **4I** (300 MHz, CDCl_3)

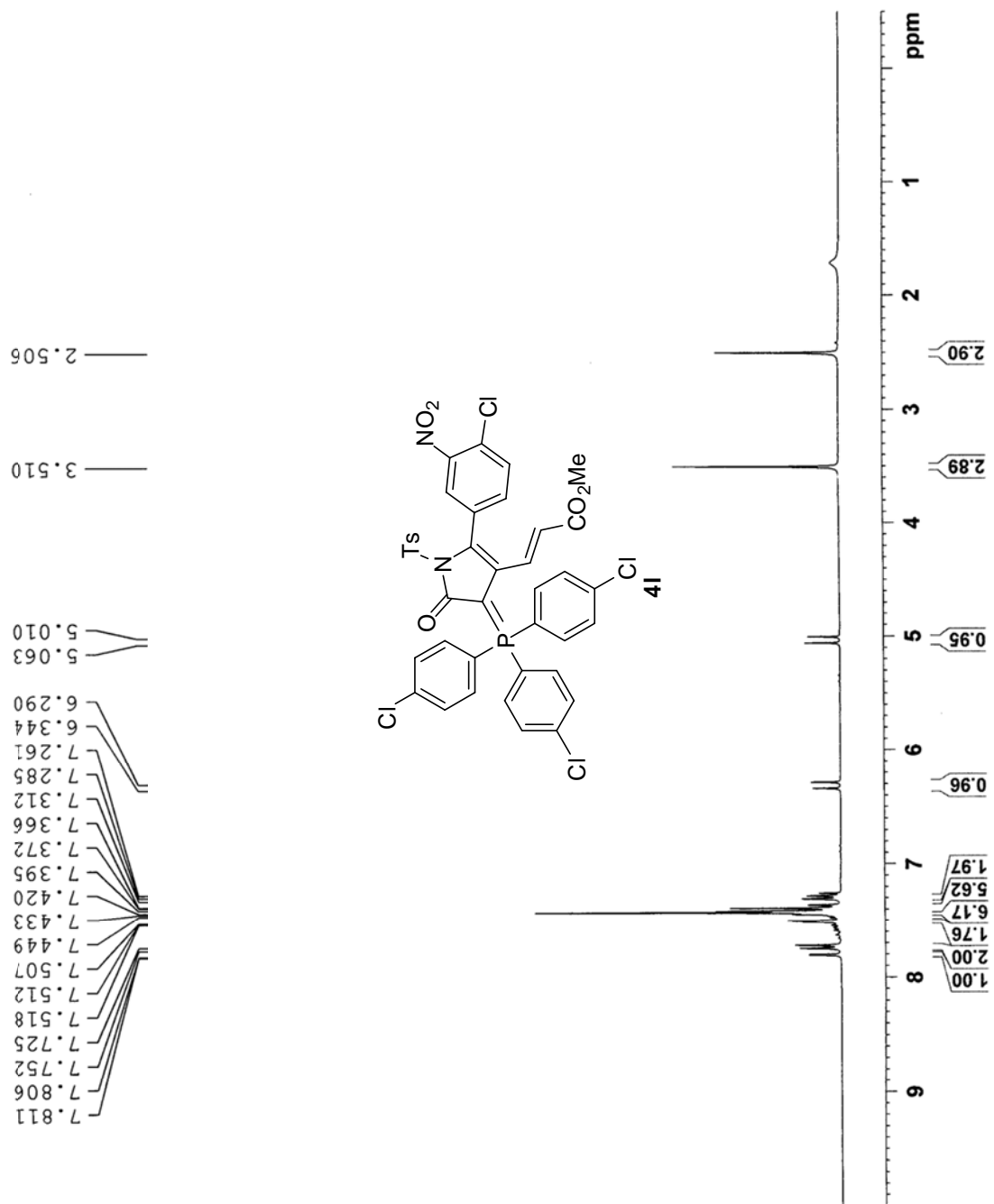


Figure S24. ^{13}C NMR spectrum of compound **4I** (100 MHz, CDCl_3)

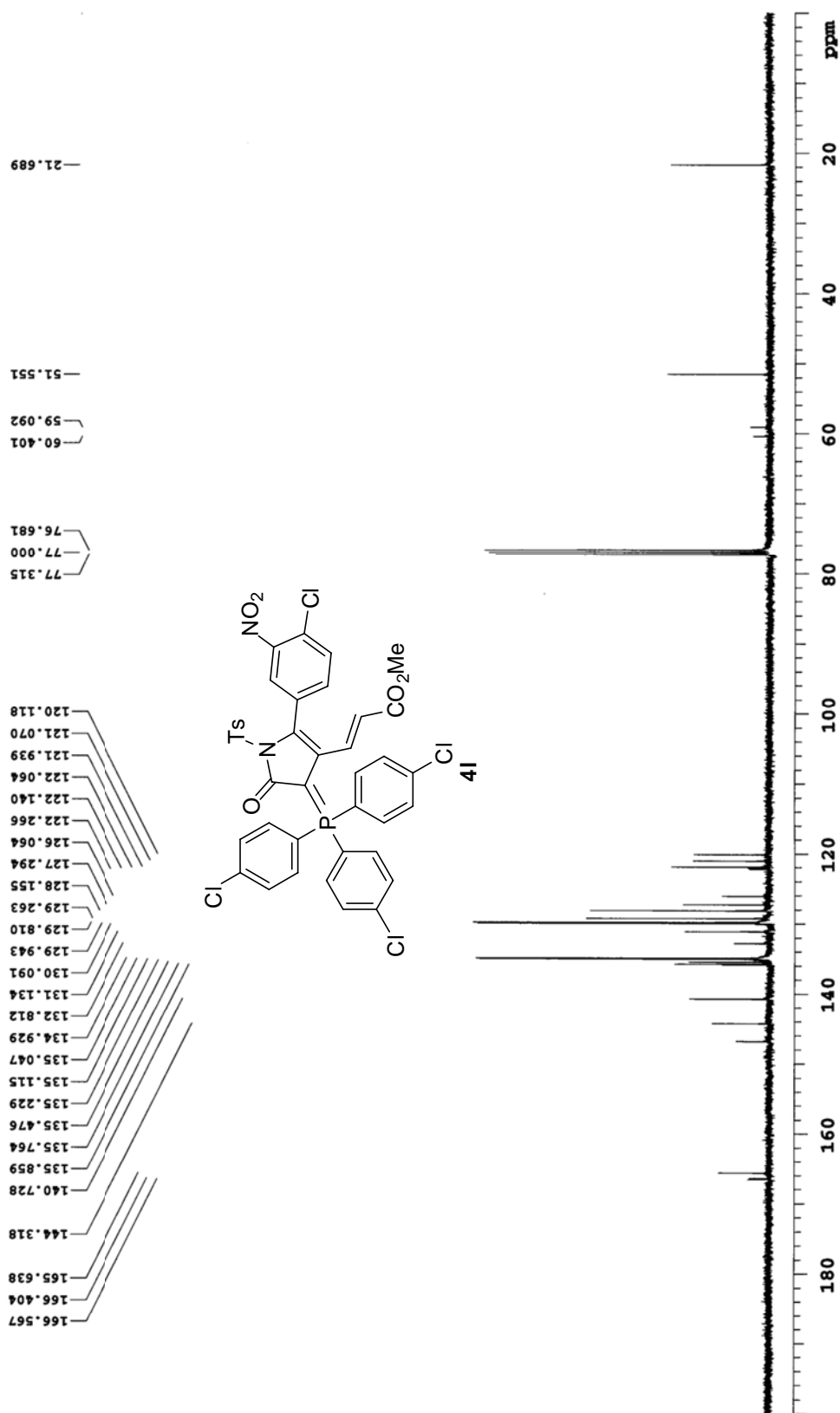


Figure S25. ^1H NMR spectrum of compound **4m** (300 MHz, CDCl_3)

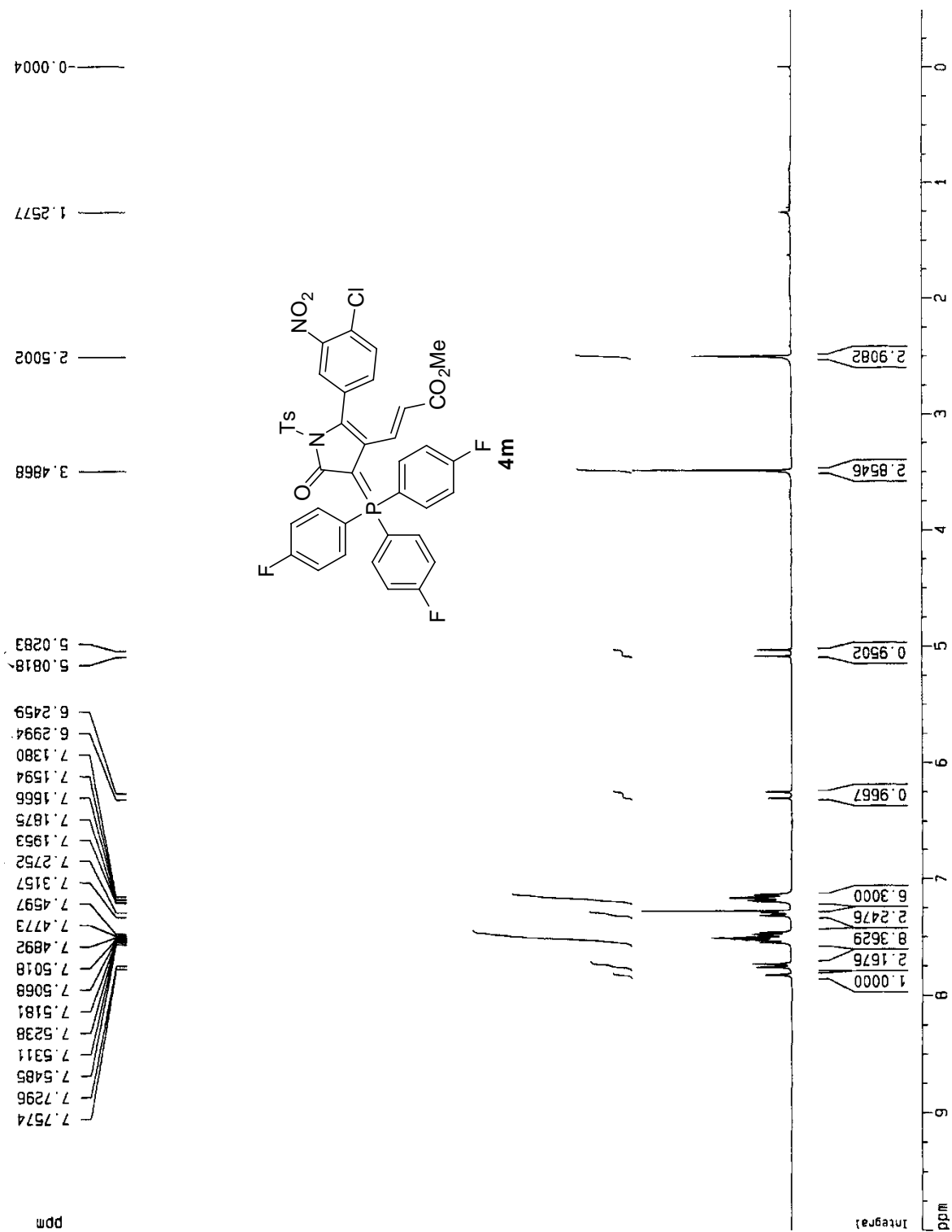


Figure S26. ^{13}C NMR spectrum of compound **4m** (75 MHz, CDCl_3)

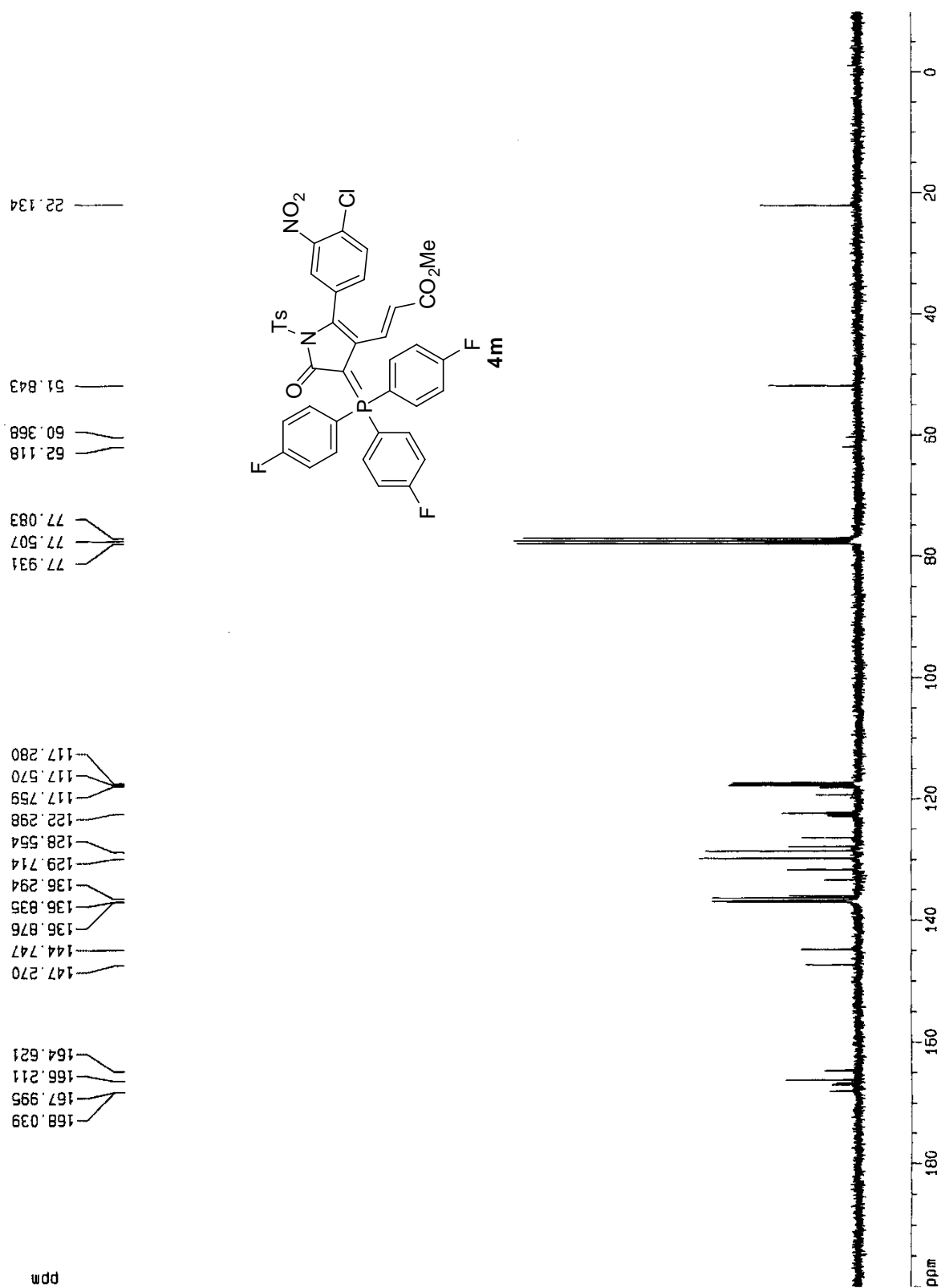


Figure S27. ^1H NMR spectrum of compound **4n** (300 MHz, CDCl_3)

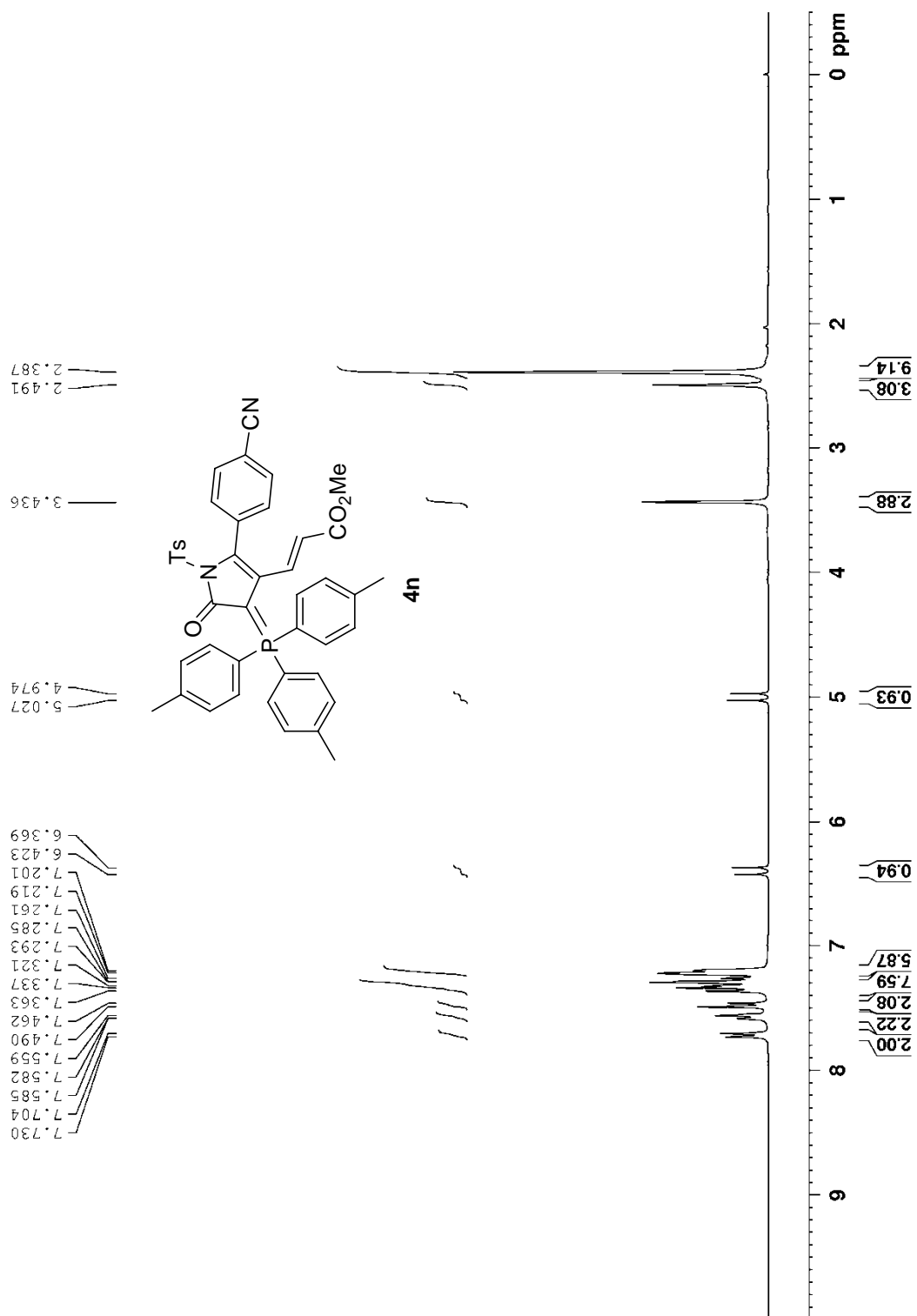


Figure S28. ^{13}C NMR spectrum of compound **4n** (75 MHz, CDCl_3)

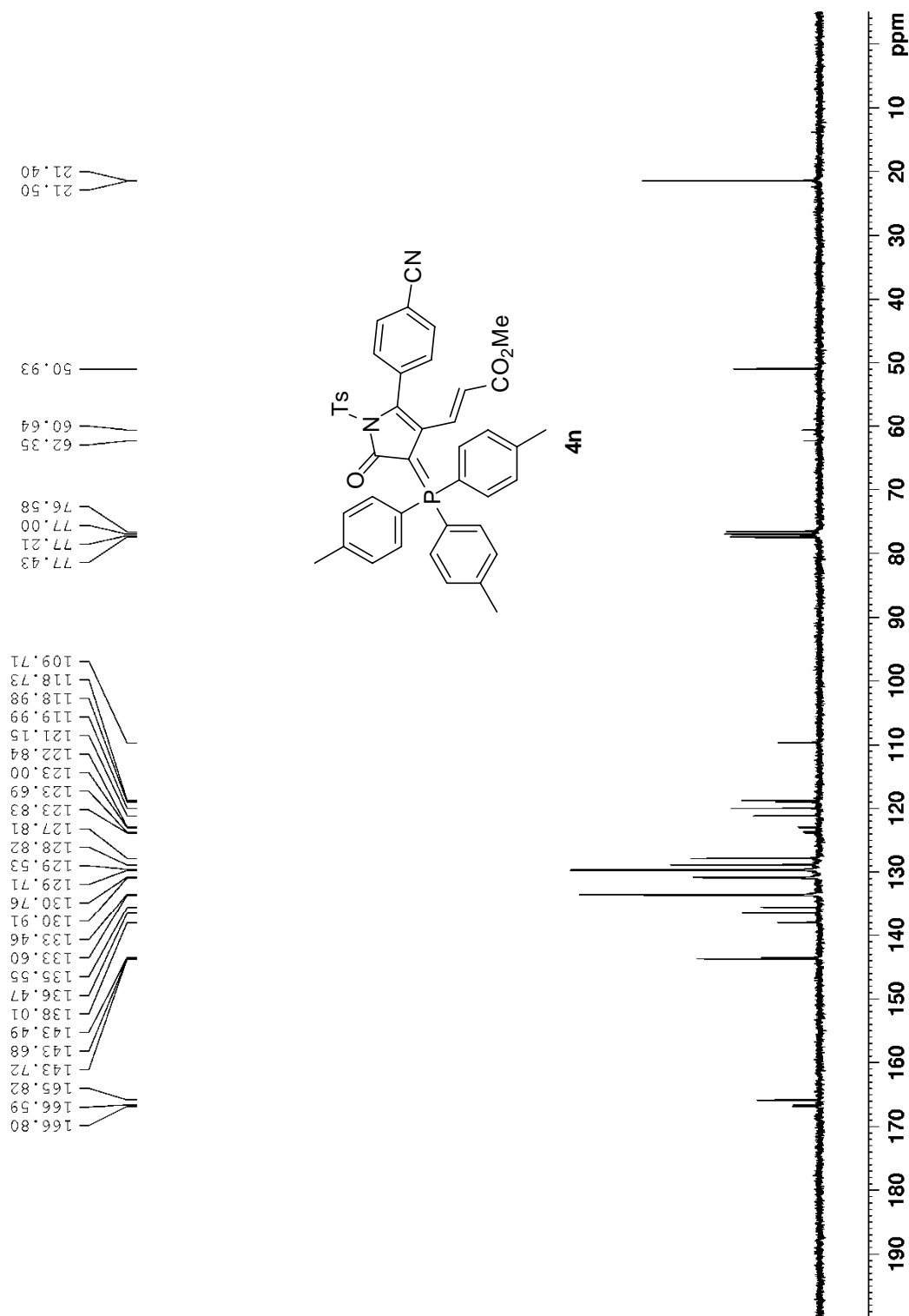


Figure S29. ¹H NMR spectrum of compound **4o** (300 MHz, CDCl₃)

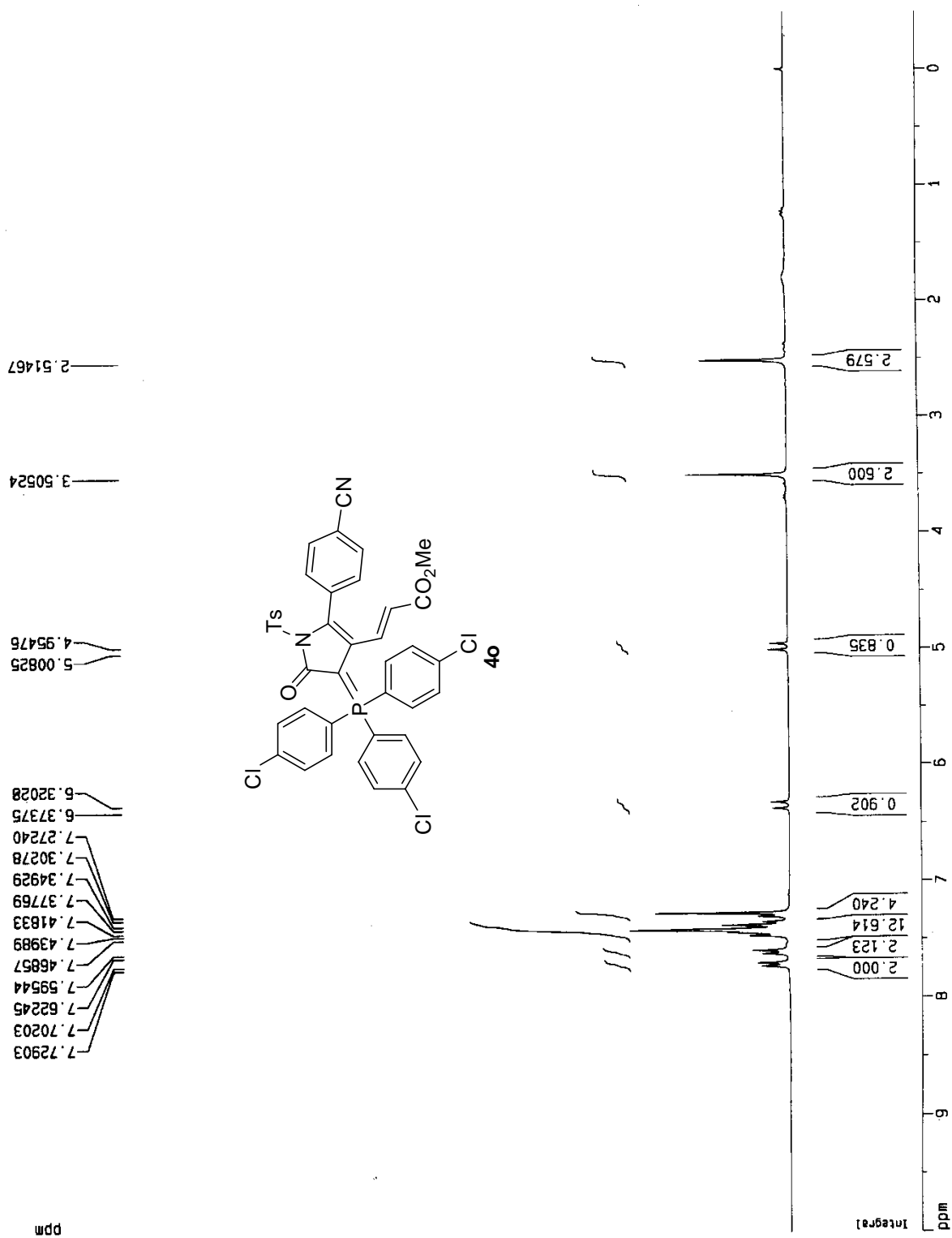


Figure S30. ^{13}C NMR spectrum of compound **40** (75 MHz, CDCl_3)

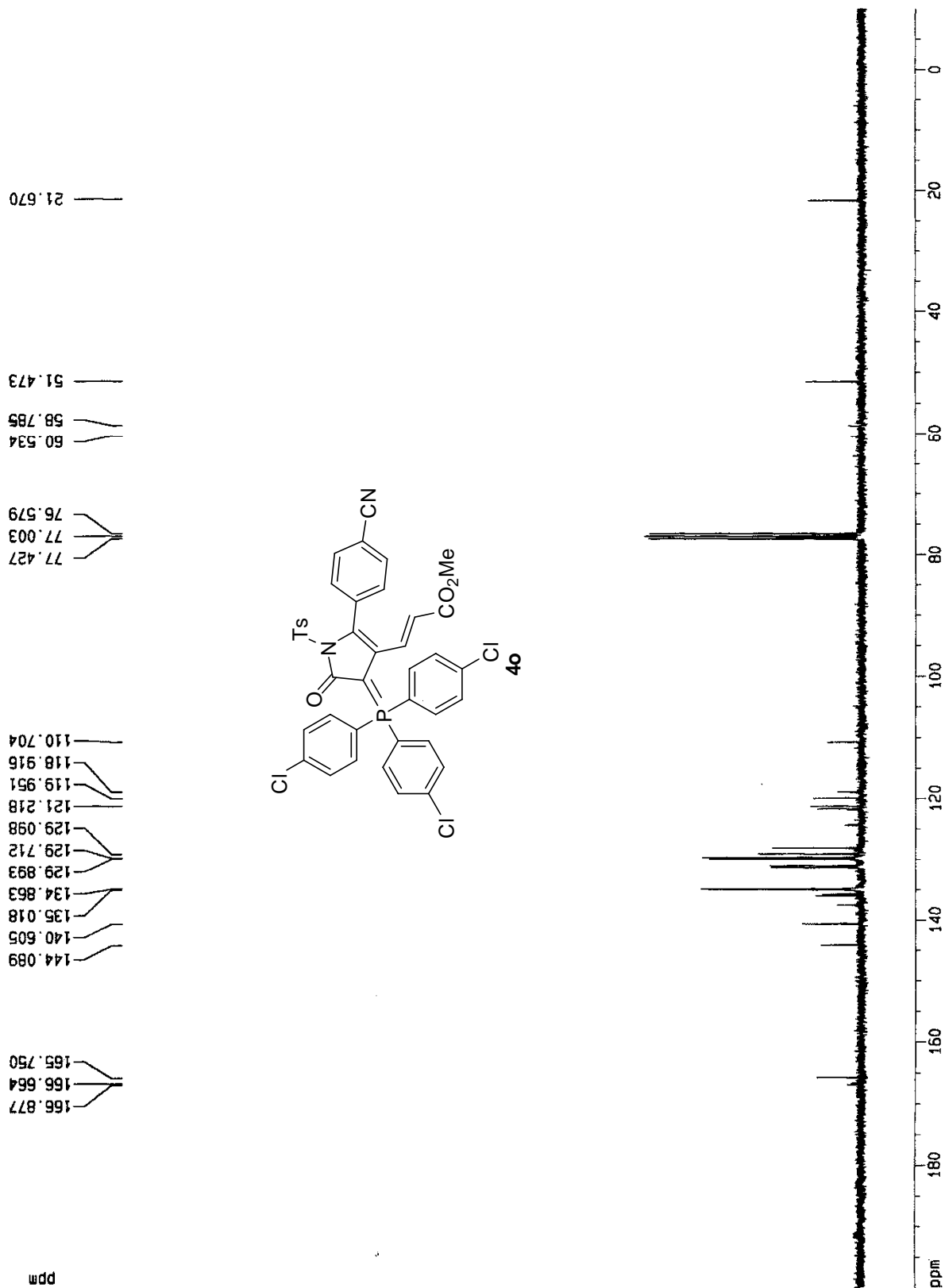


Figure S31. ¹H NMR spectrum of compound **4p** (300 MHz, CDCl₃)

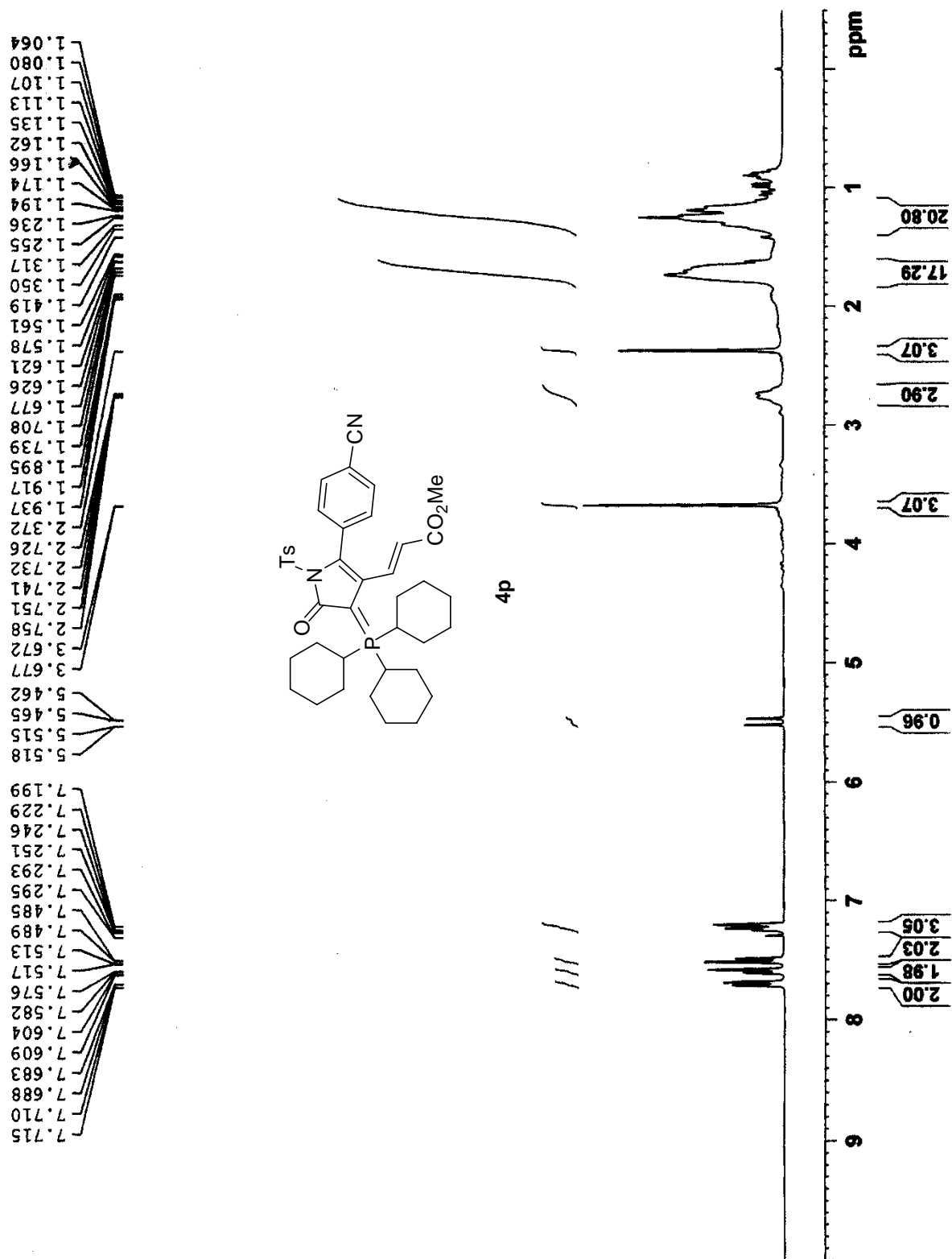
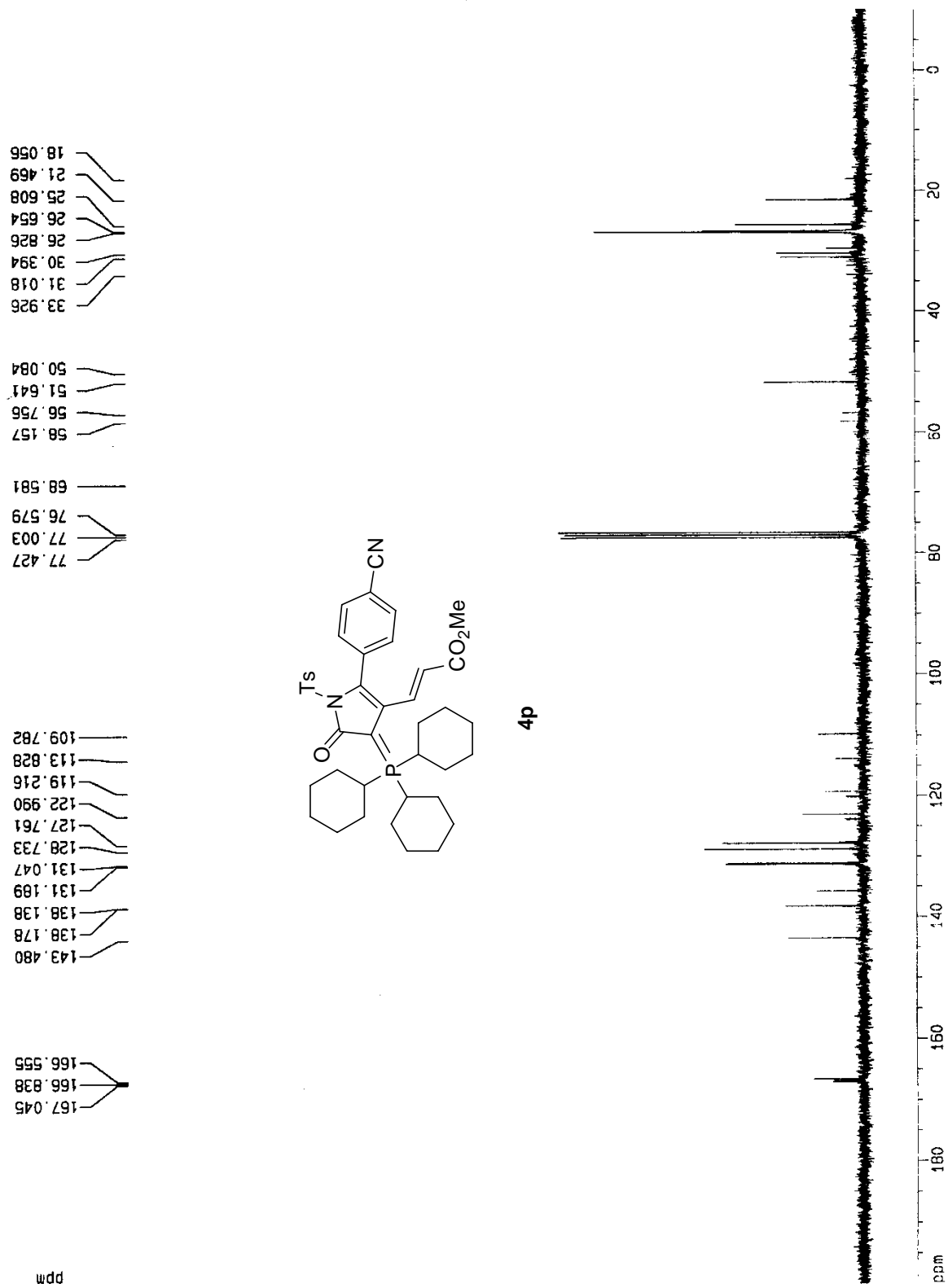


Figure S32. ^{13}C NMR spectrum of compound **4p** (75 MHz, CDCl_3)



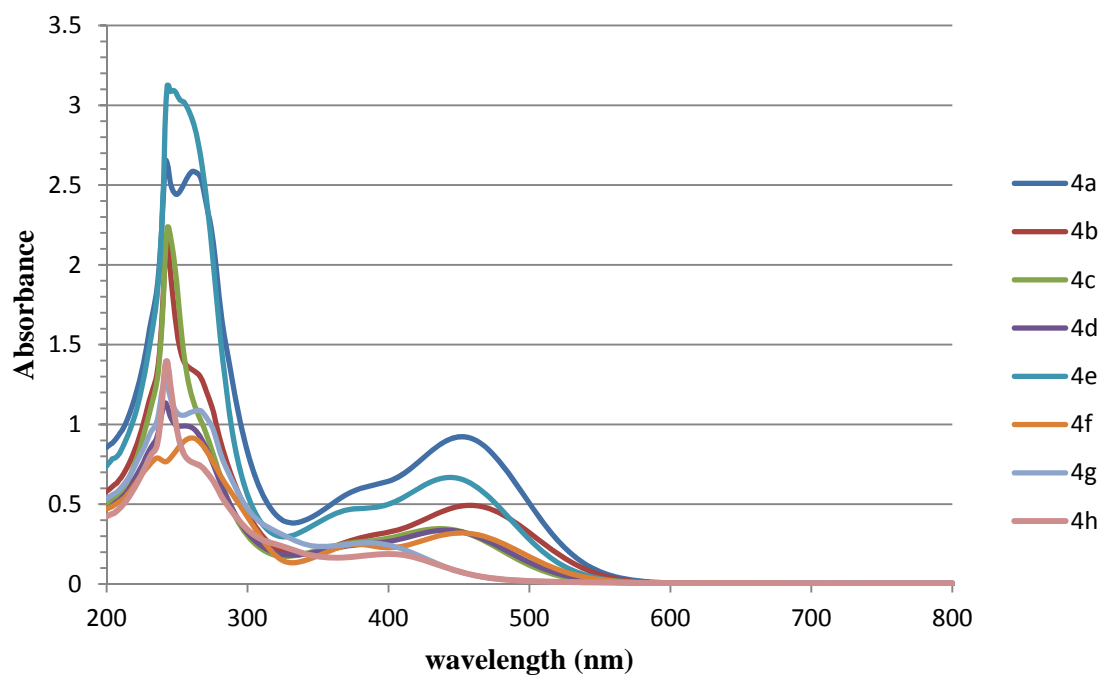


Figure S33. UV-vis absorption spectrum of **4a-4h** (5.0×10^{-5} M in CHCl_3 ; light path = 10 mm).

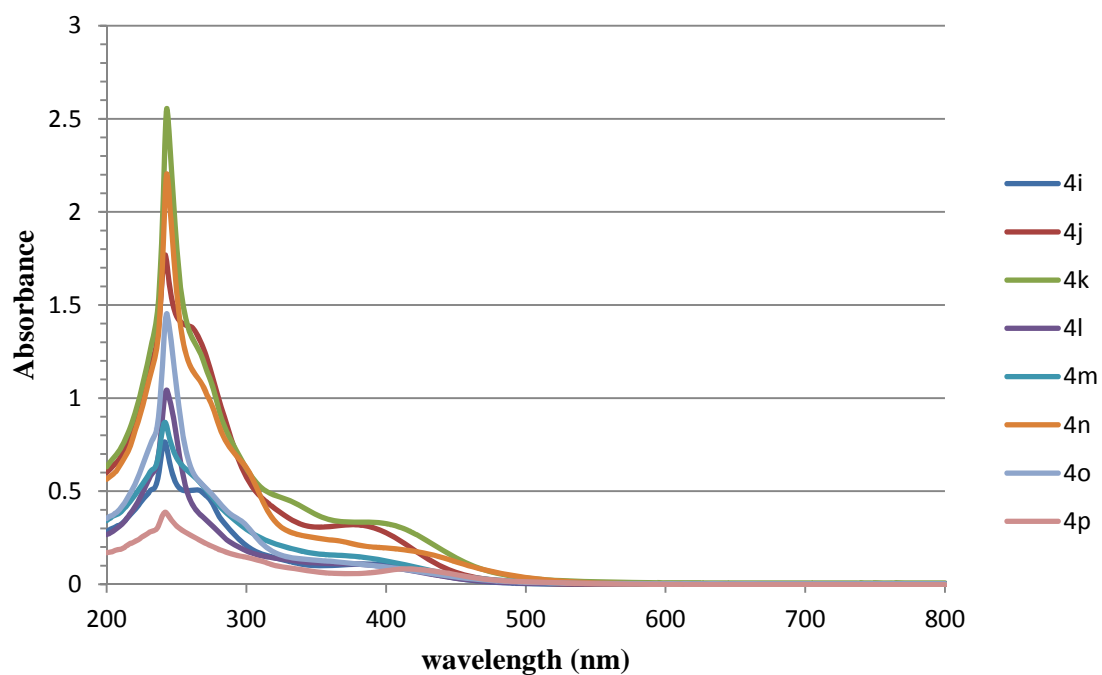


Figure S34. UV-vis absorption spectrum of **4i-4p** (5.0×10^{-5} M in CHCl_3 ; light path = 10 mm).

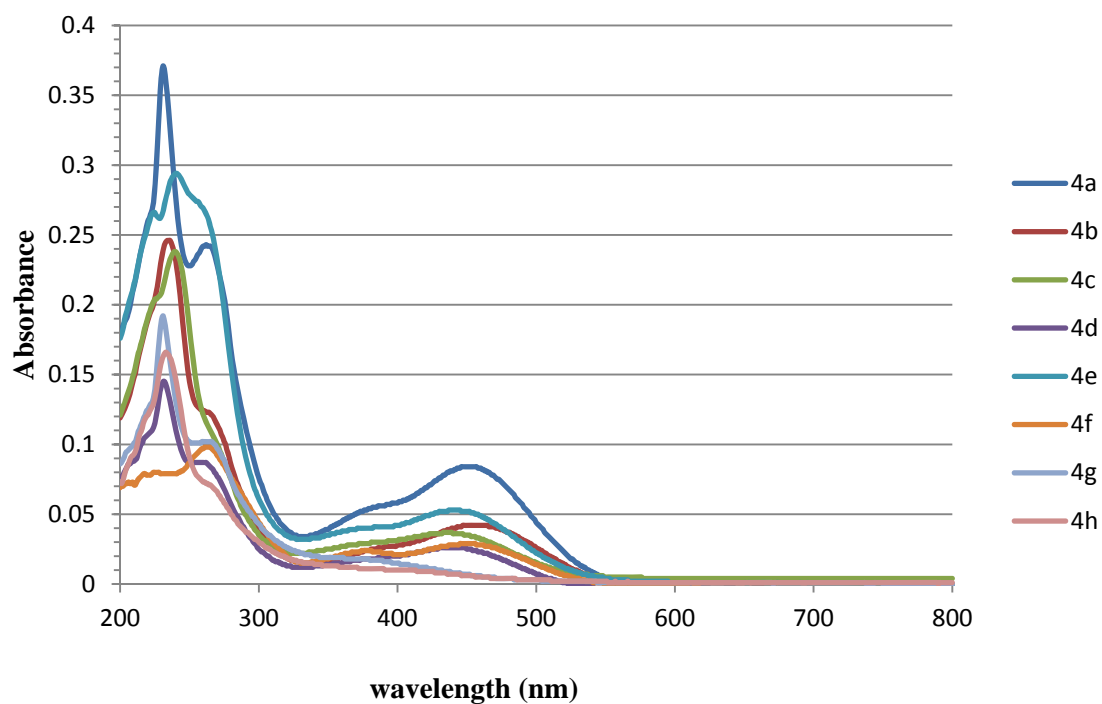


Figure S35. UV-vis absorption spectrum of **4a-4h** (5.0×10^{-5} M in CHCl_3 ; light path = 1 mm).

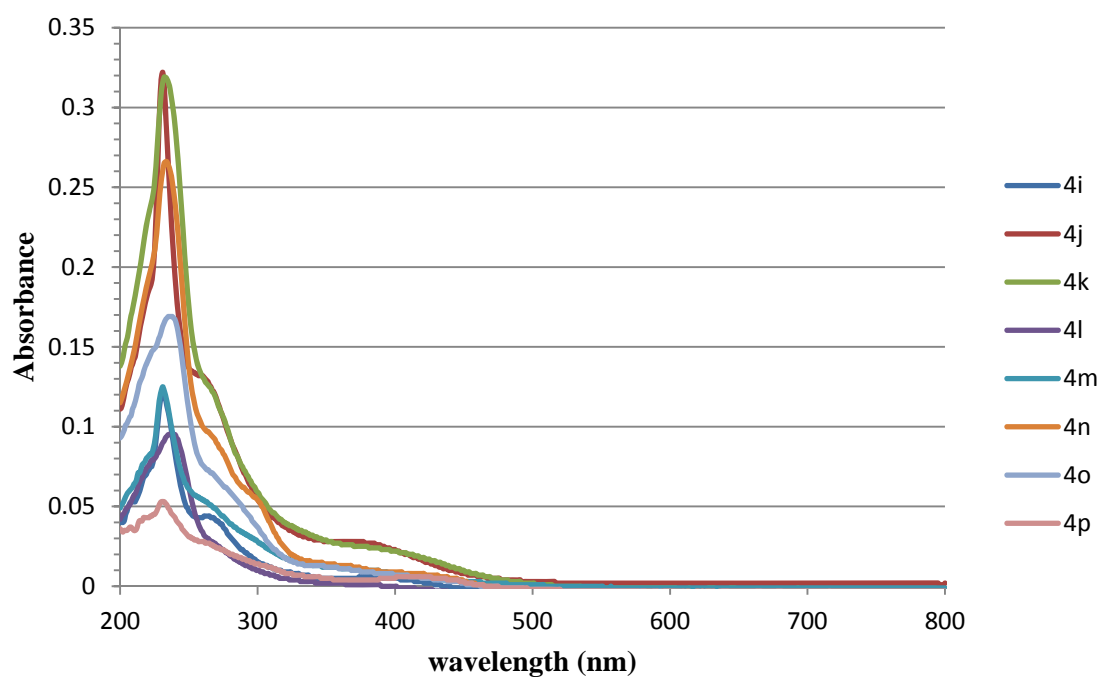


Figure S36. UV-vis absorption spectrum of **4i-4p** (5.0×10^{-5} M in CHCl_3 ; light path = 1 mm)