

SUPPORTING INFORMATION

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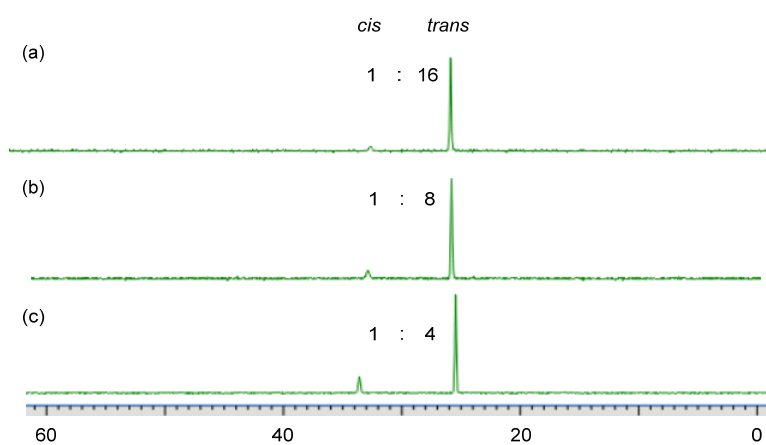


Figure S1. ^{31}P NMR spectra (161.70 MHz, CDCl_3) of **3** at 50 °C (a), 20 °C (b), and -50 °C (c).

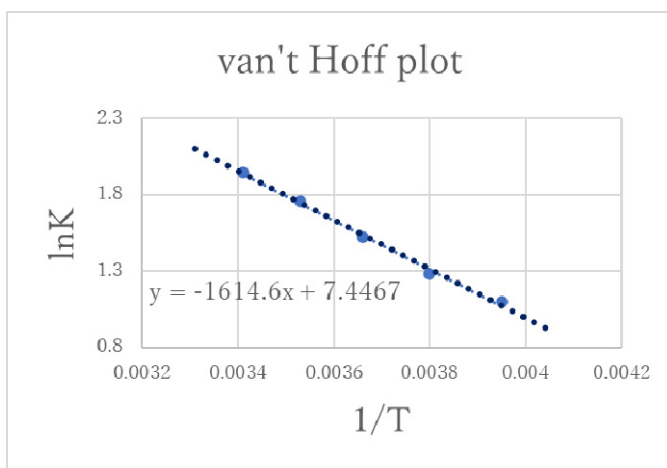


Figure S2. van't Hoff plots for 3.

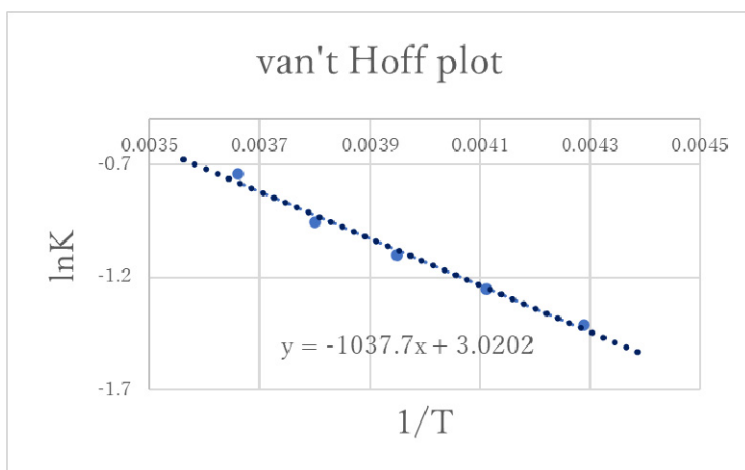


Figure S3. van't Hoff plots for 5.

NMR spectra of all new compounds

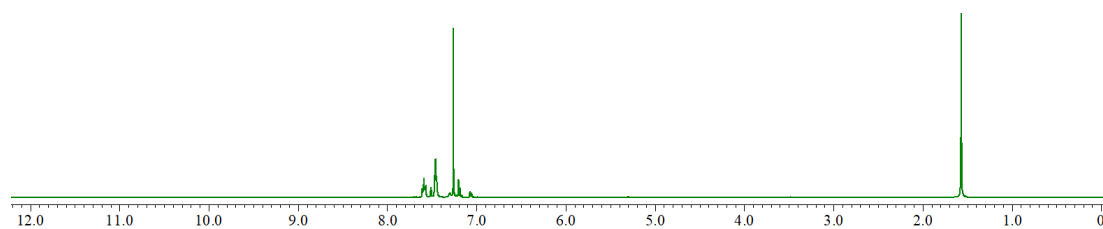


Figure S4. ^1H NMR spectrum (400 MHz, CDCl_3 , 20 °C) of **1h**.

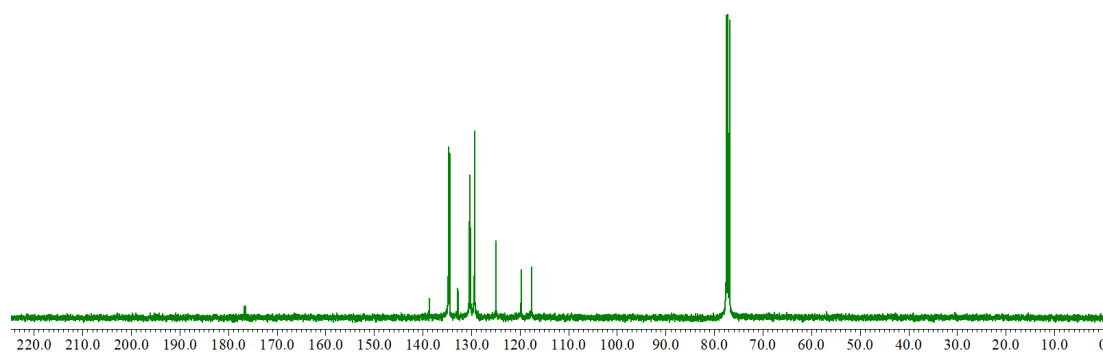


Figure S5. ^{13}C NMR spectrum (100.4 MHz, CDCl_3 , 20 °C) of **1h**.

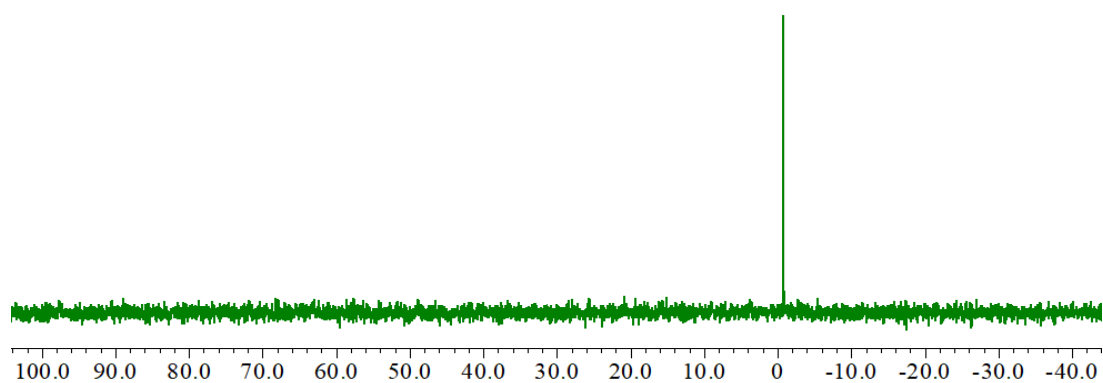


Figure S6. $^{31}\text{P}\{^1\text{H}\}$ NMR spectrum (161.70 MHz, CDCl_3 , 20 °C) of **1h**.

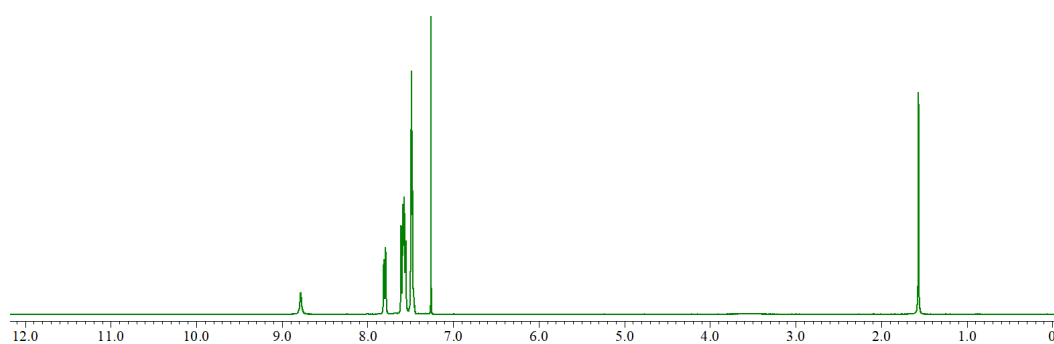


Figure S7. ^1H NMR spectrum (400 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2e**.

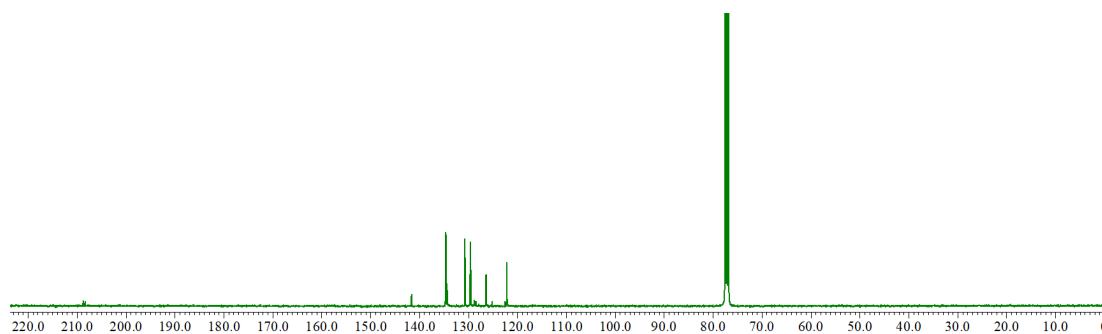


Figure S8. ^{13}C NMR spectrum (100.4 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2e**.

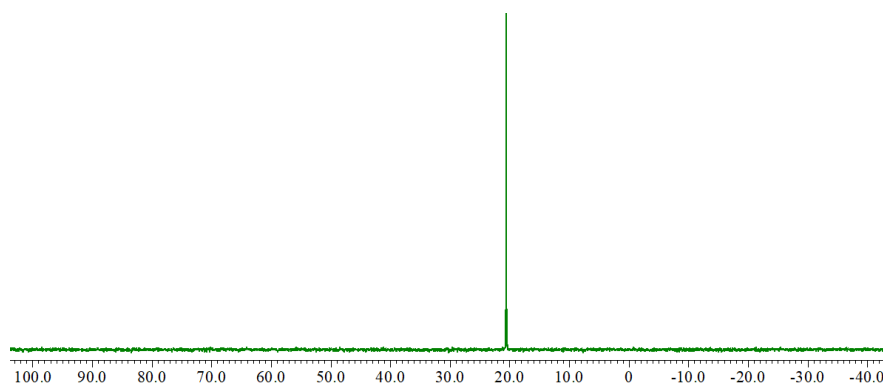


Figure S9. $^{31}\text{P}\{^1\text{H}\}$ NMR spectrum (161.70 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2e**.

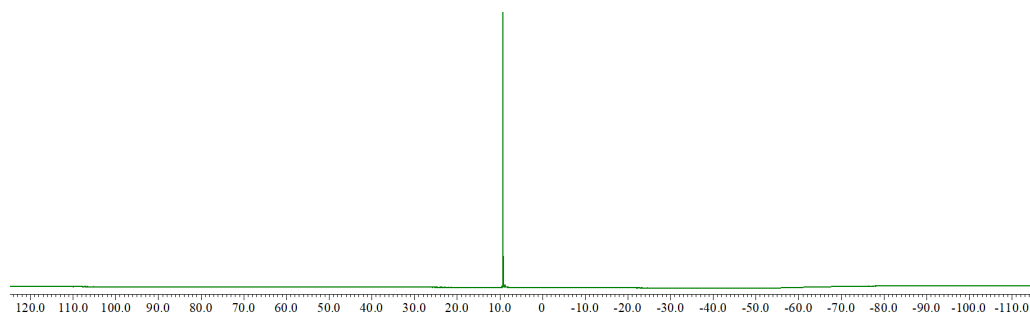


Figure S10. ^{19}F NMR spectrum (376.95 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2e**.

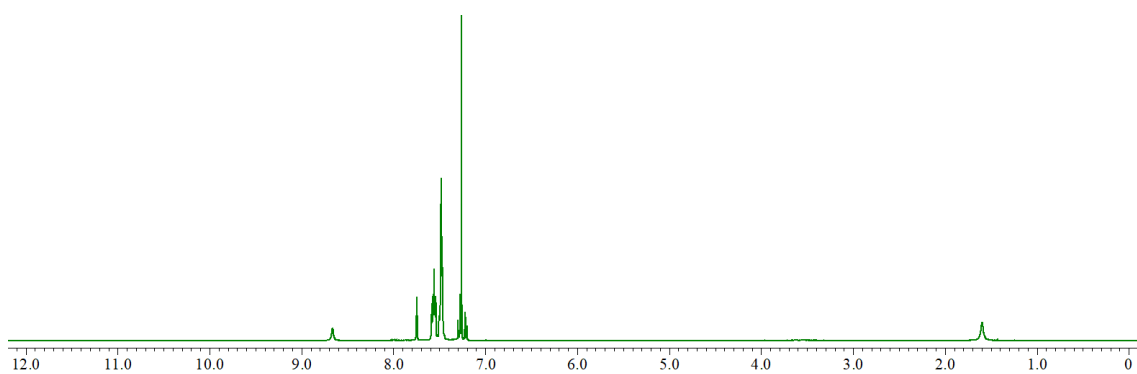


Figure S11. ^1H NMR spectrum (400 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2h**.

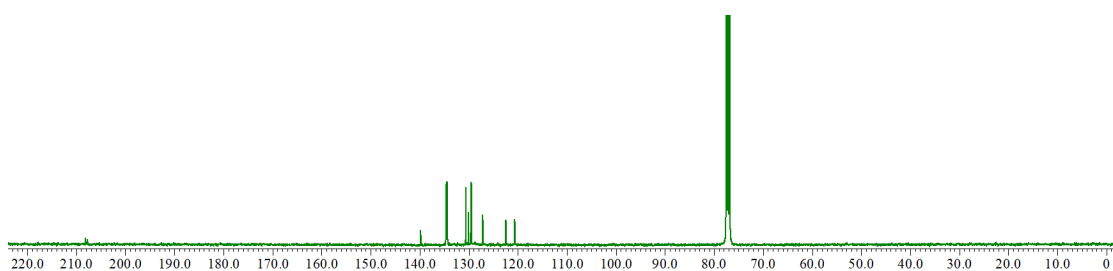


Figure S12. ^{13}C NMR spectrum (100.4 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2h**.

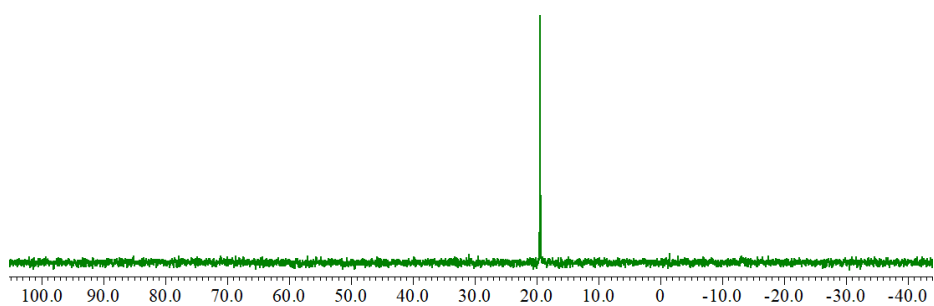


Figure S13. $^{31}\text{P}\{^1\text{H}\}$ NMR spectrum (161.70 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2h**.

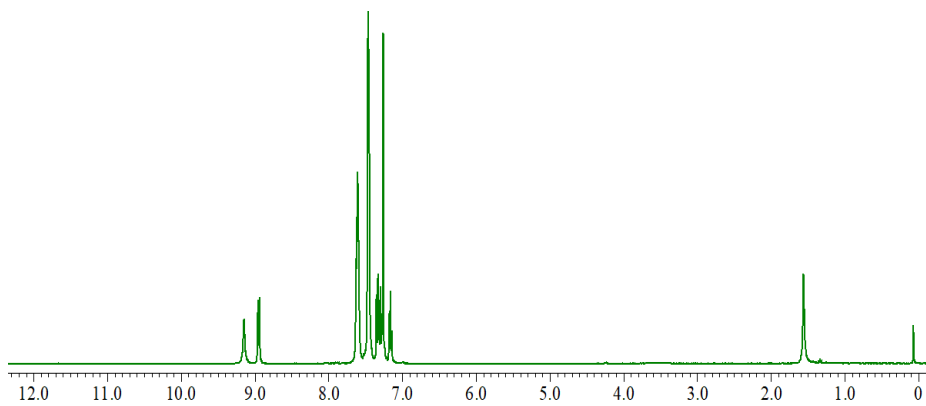


Figure S14. ^1H NMR spectrum (400 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2i**.

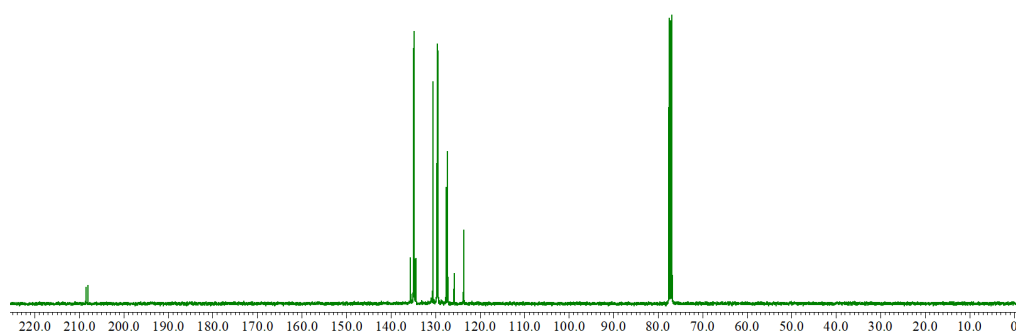


Figure S15. ^{13}C NMR spectrum (100.4 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2i**.

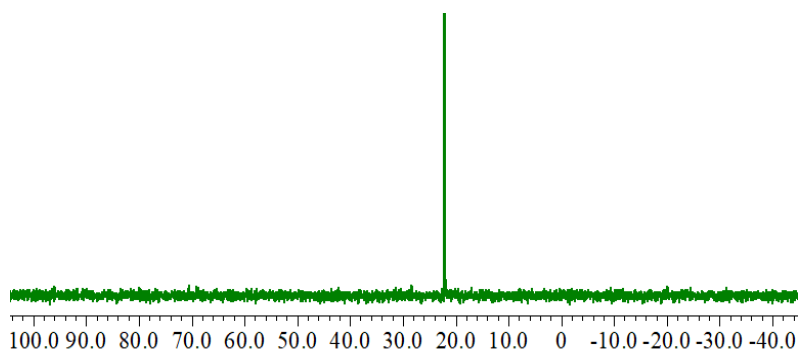


Figure S16. $^{31}\text{P}\{^1\text{H}\}$ NMR spectrum (161.70 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2i**.

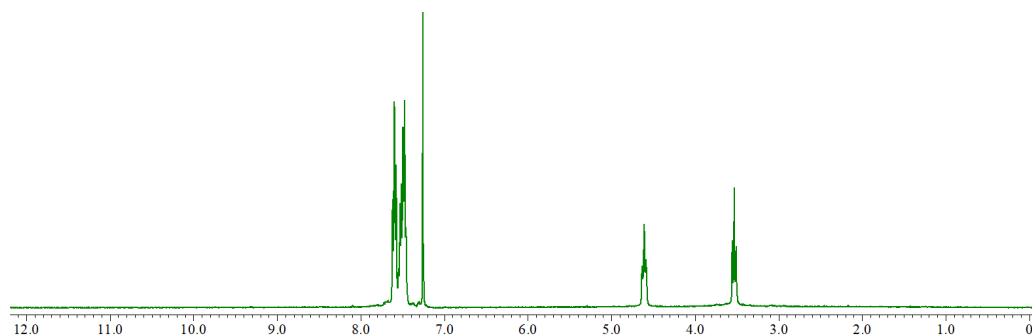


Figure S17. ^1H NMR spectrum (400 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2j**.

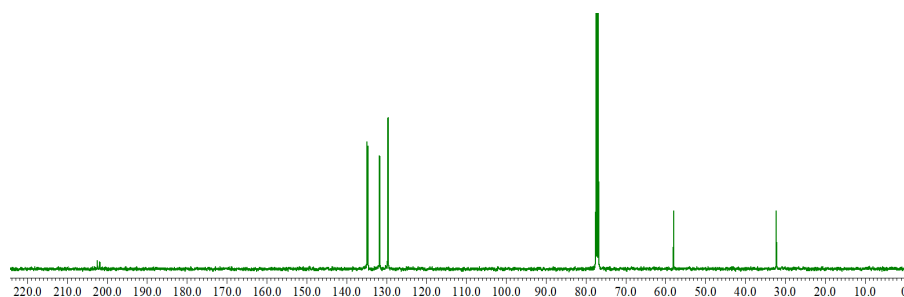


Figure S18. ^{13}C NMR spectrum (100.4 MHz, CDCl_3 , 20 $^\circ\text{C}$) of **2j**.

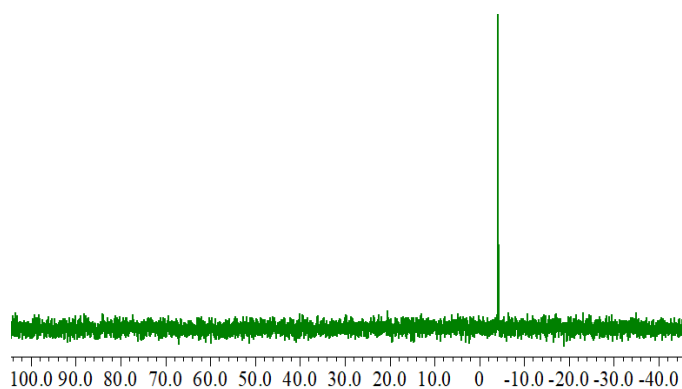


Figure S19. $^{31}\text{P}\{^1\text{H}\}$ NMR spectrum (161.70 MHz, CDCl_3 , 20 °C) of **2j**.

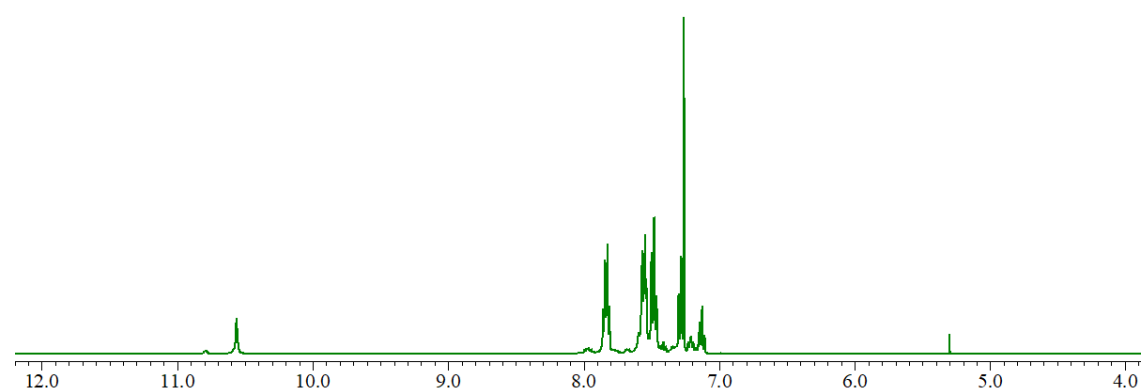


Figure S20. ^1H NMR spectrum (400 MHz, CDCl_3 , 20 °C) of **3**.

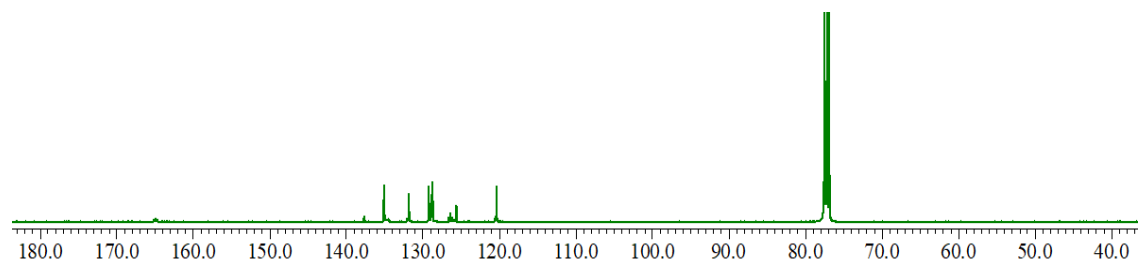


Figure S21. $^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (100.4 MHz, CDCl_3 , 20 °C) of **3**.

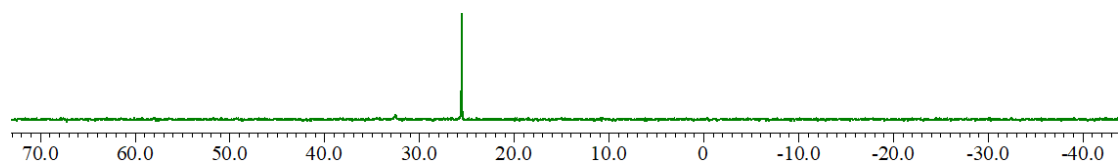


Figure S22. $^{31}\text{P}\{^1\text{H}\}$ NMR spectrum (162 MHz, CDCl_3 , 20 °C) of **3**.

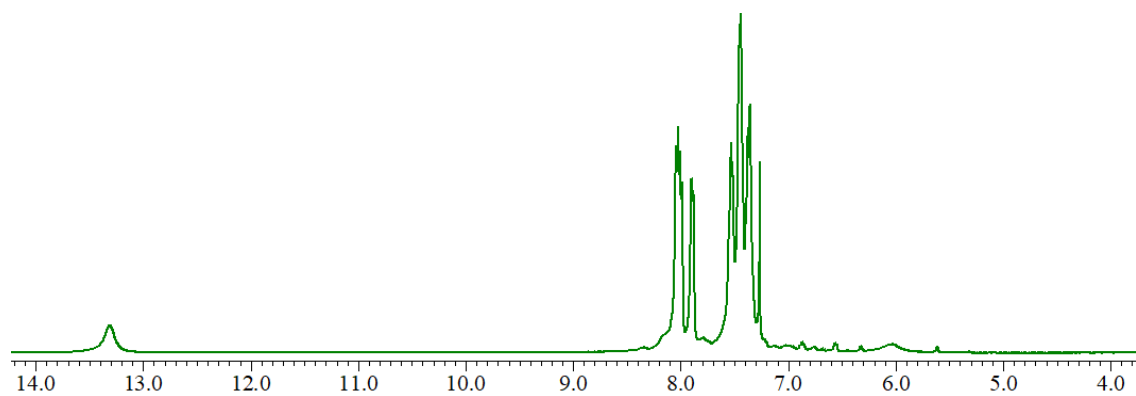


Figure S23. ^1H NMR spectrum (400 MHz, CDCl_3 , -50°C) of **4**.

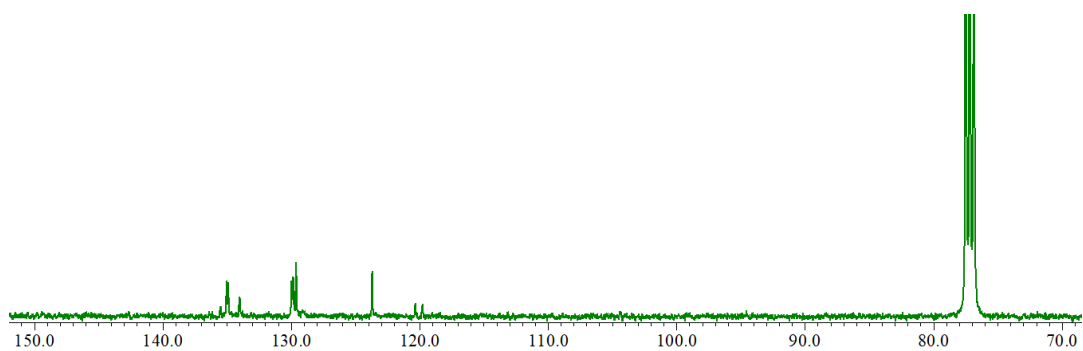


Figure S24. $^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (100.4 MHz, CDCl_3 , 20°C) of **4**.

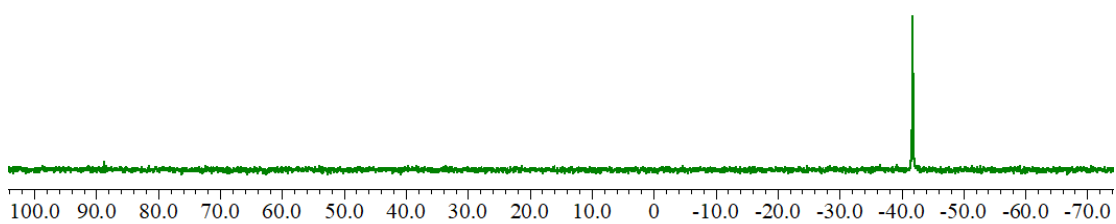


Figure S25. $^{31}\text{P}\{^1\text{H}\}$ NMR spectrum (162 MHz, CDCl_3 , 20°C) of **4**.

