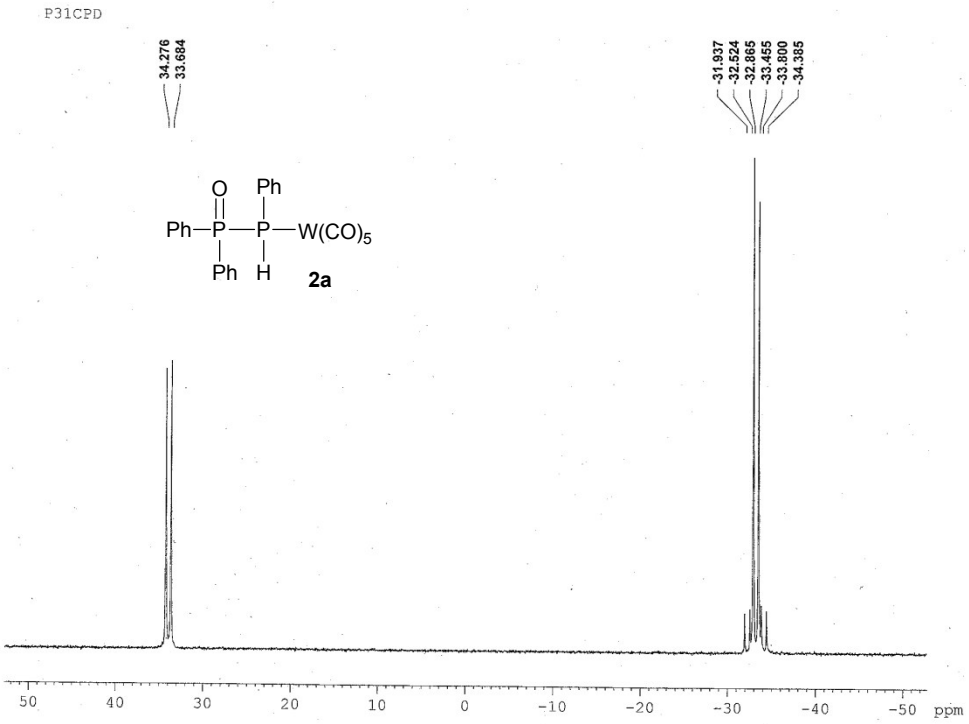
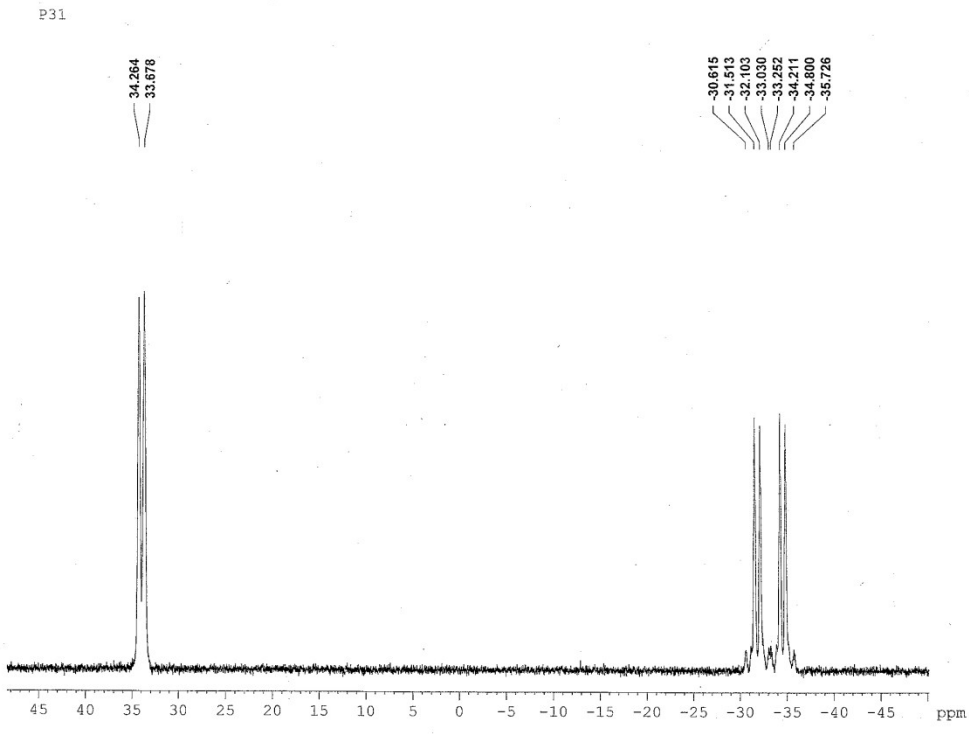
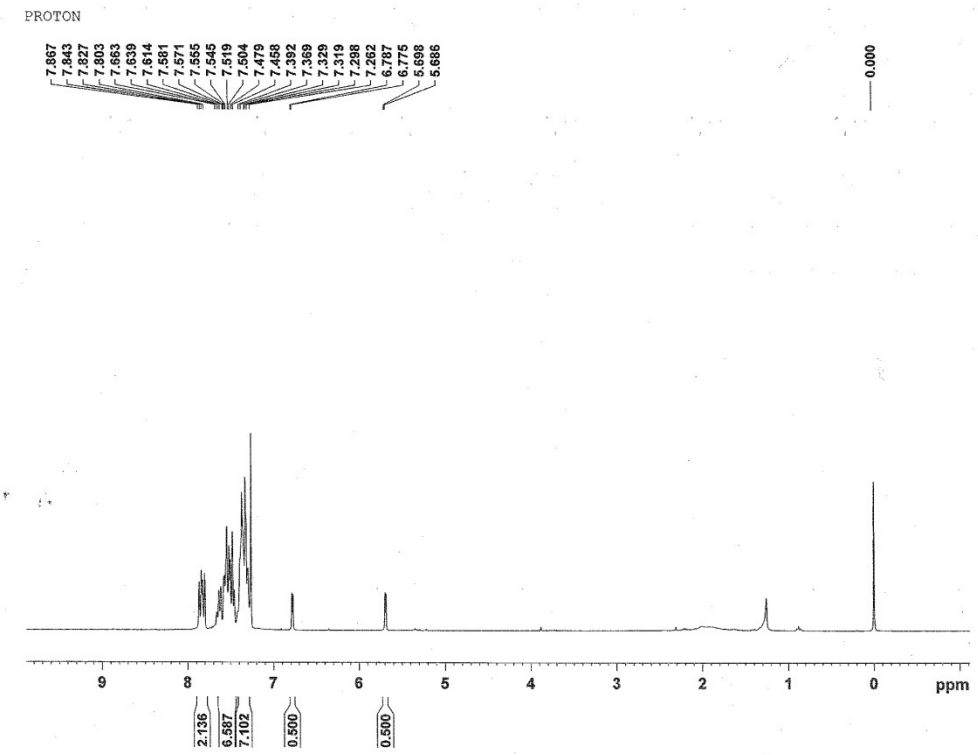


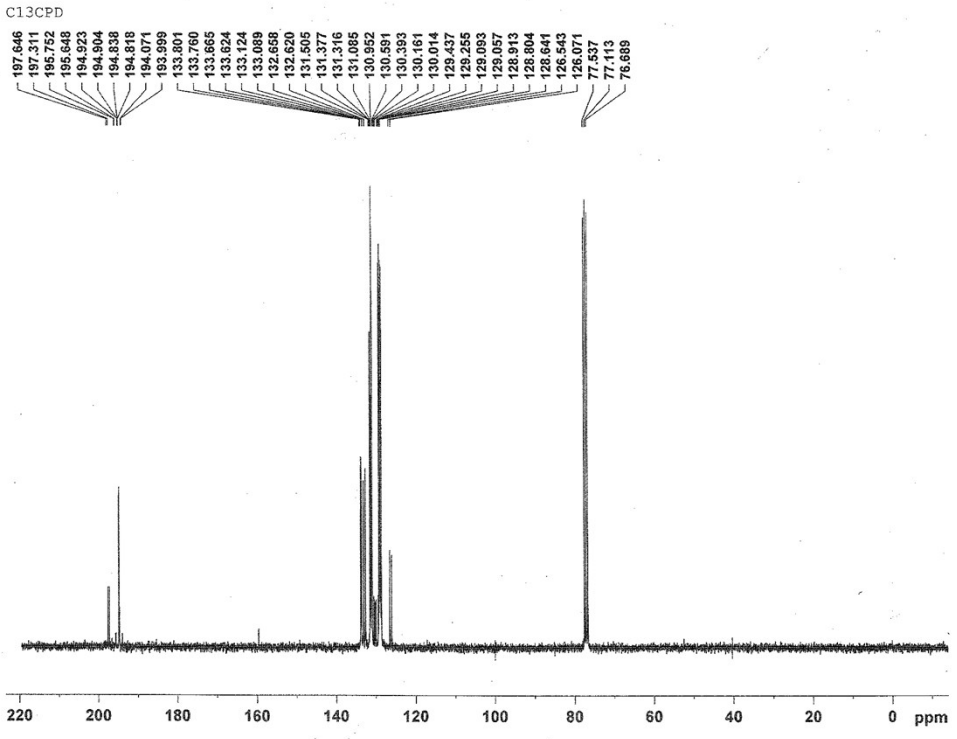
^{31}P CPD NMR ($CDCl_3$) of **2a**



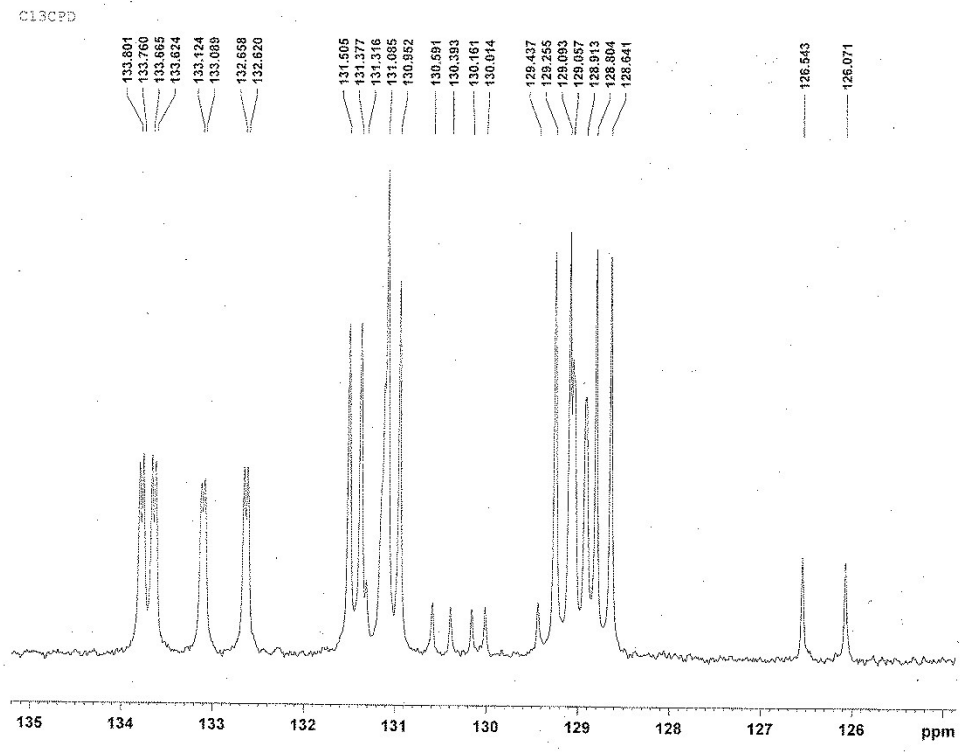
^{31}P NMR ($CDCl_3$ P-H coupling) of **2a**



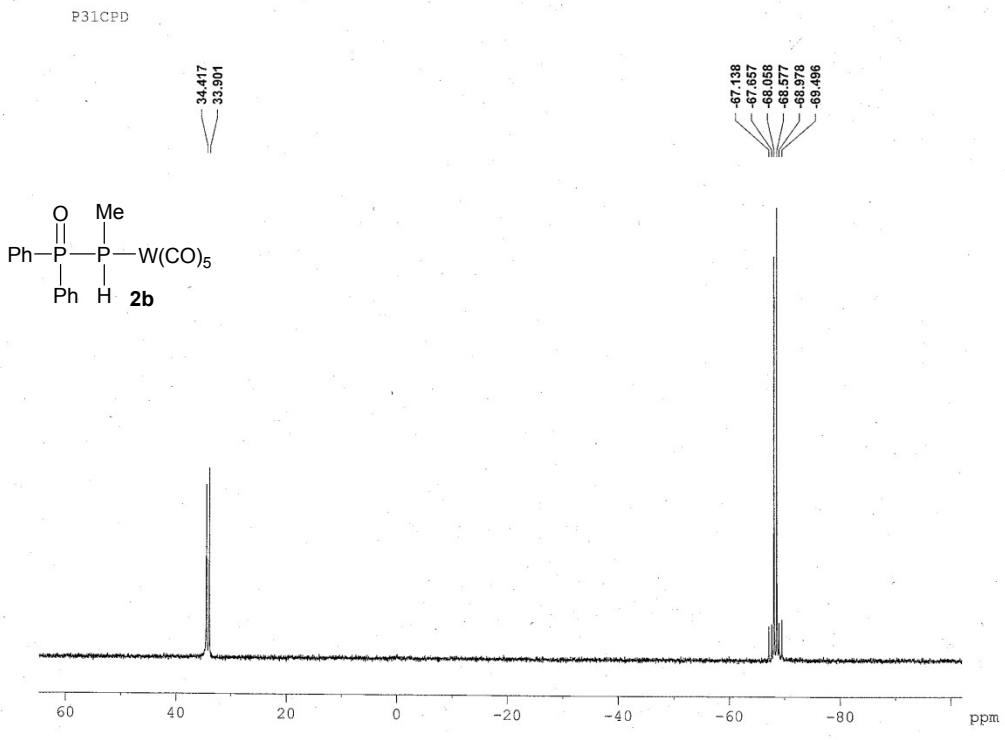
^{1}H NMR ($CDCl_3$) of **2a**



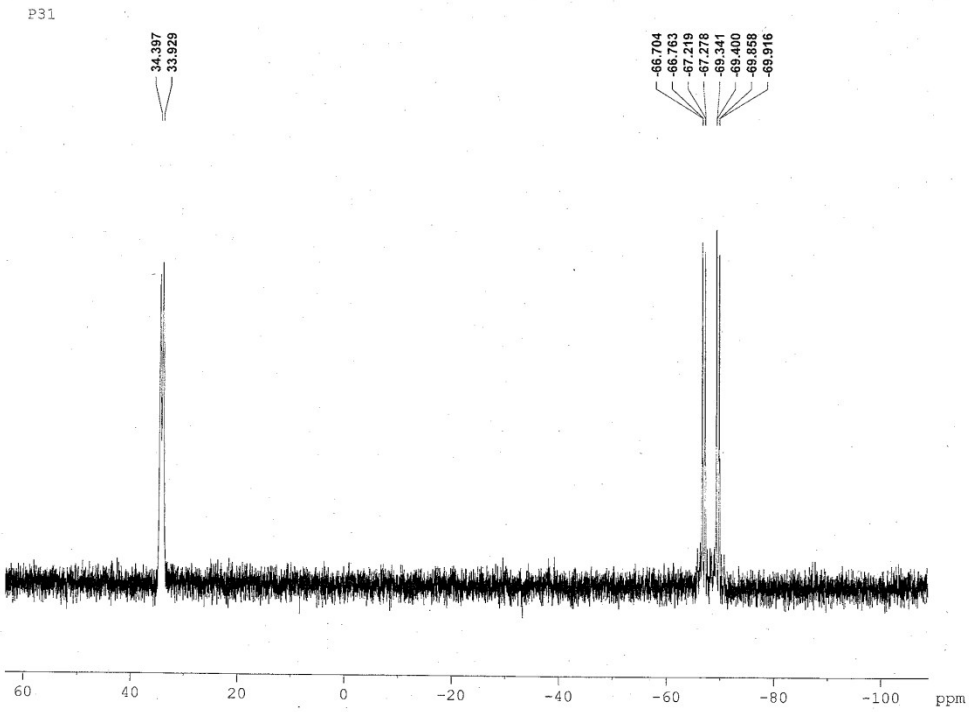
^{13}C NMR ($CDCl_3$) of **2a**



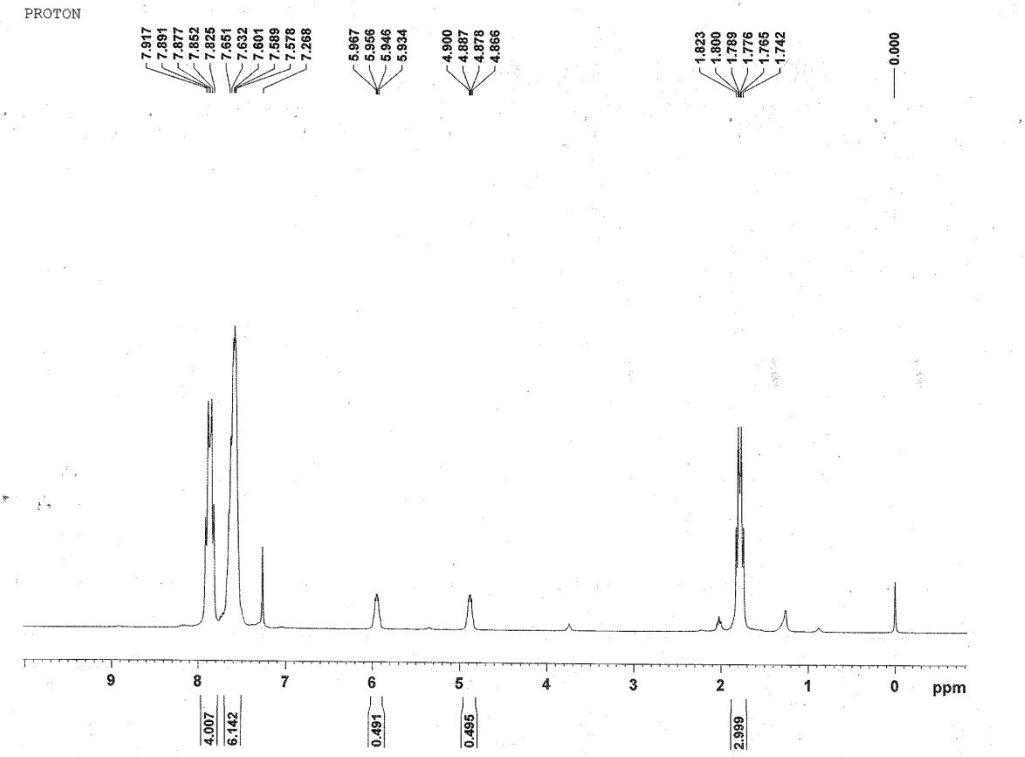
^{13}C NMR ($CDCl_3$) of **2a**



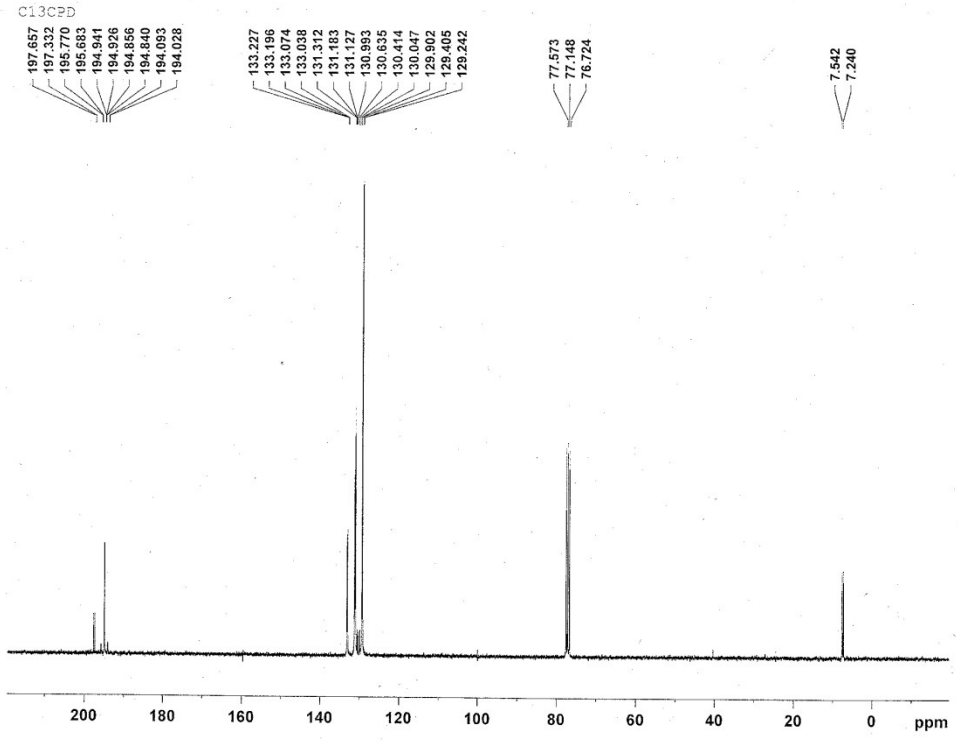
^{31}P CPD NMR ($CDCl_3$) of **2b**



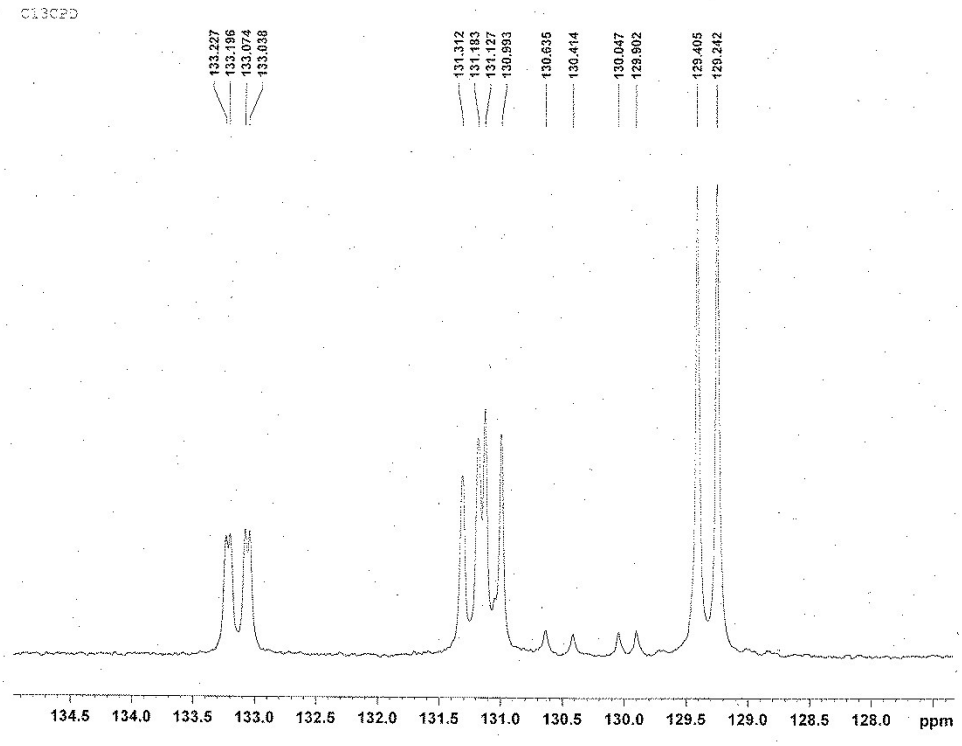
^{31}P NMR ($CDCl_3$ P-H coupling) of **2b**



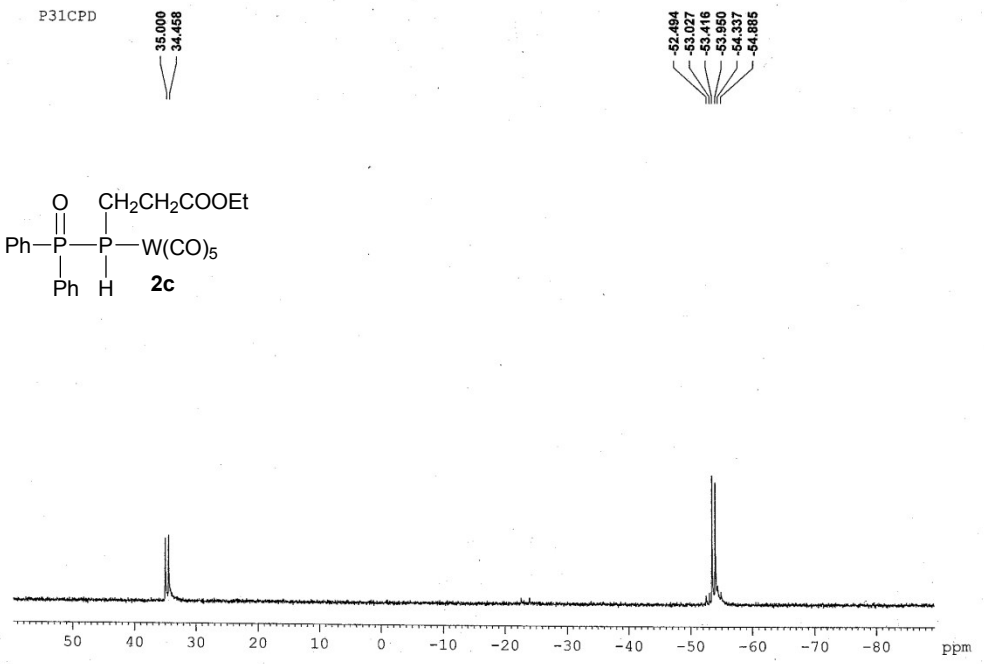
^{1}H NMR ($CDCl_3$) of **2b**



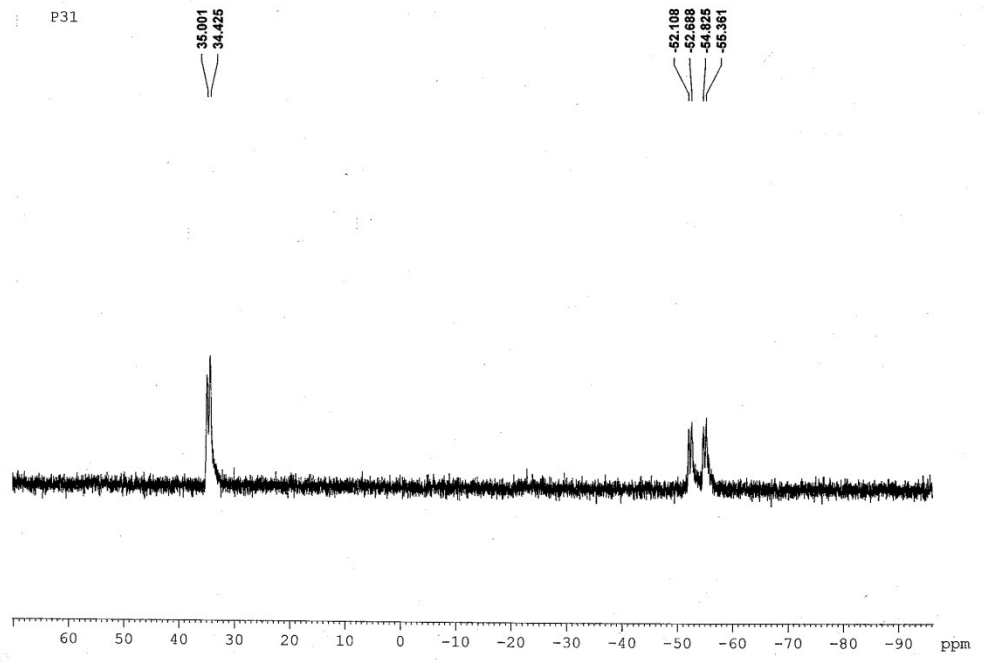
^{13}C NMR ($CDCl_3$) of **2b**



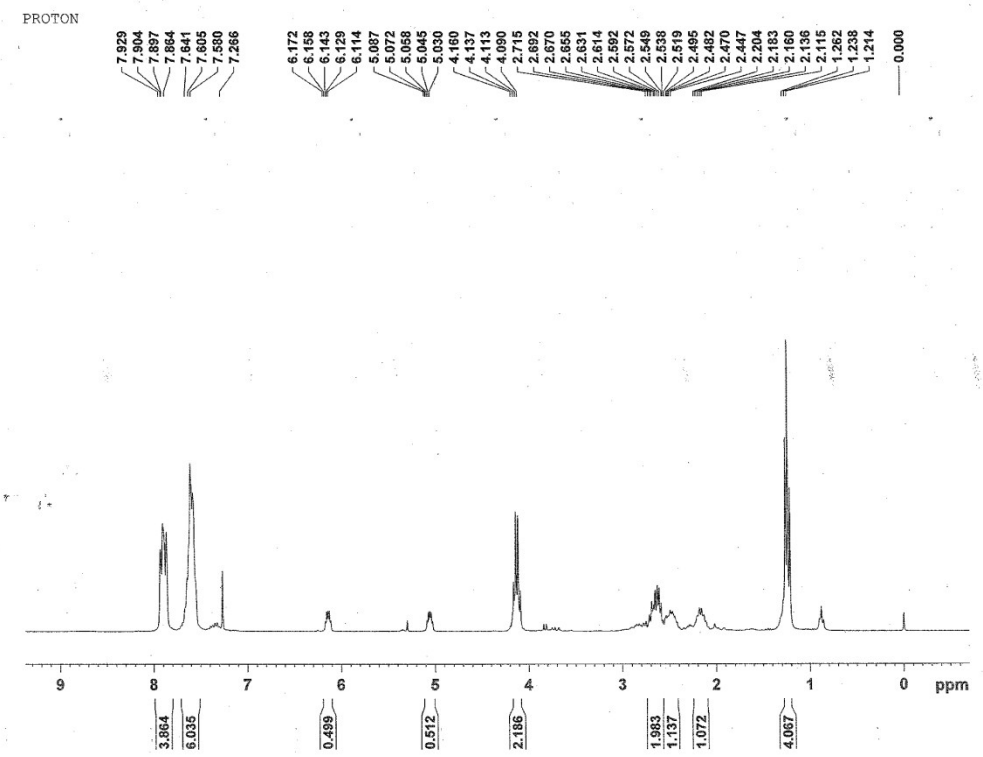
^{13}C NMR ($CDCl_3$) of **2b**



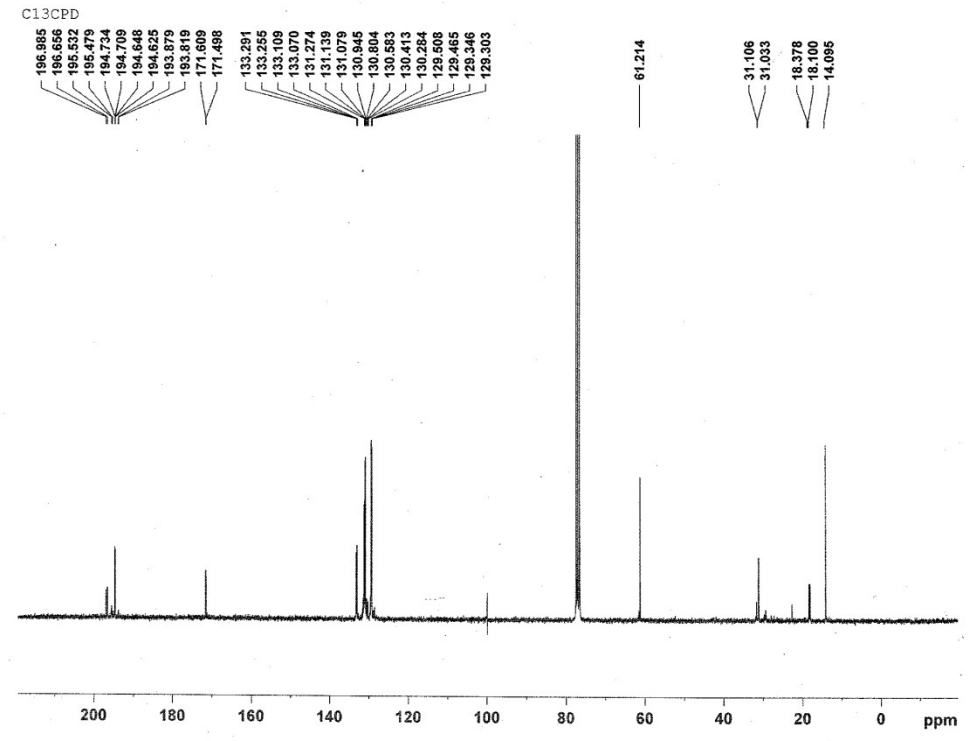
^{31}P CPD NMR ($CDCl_3$) of **2c**



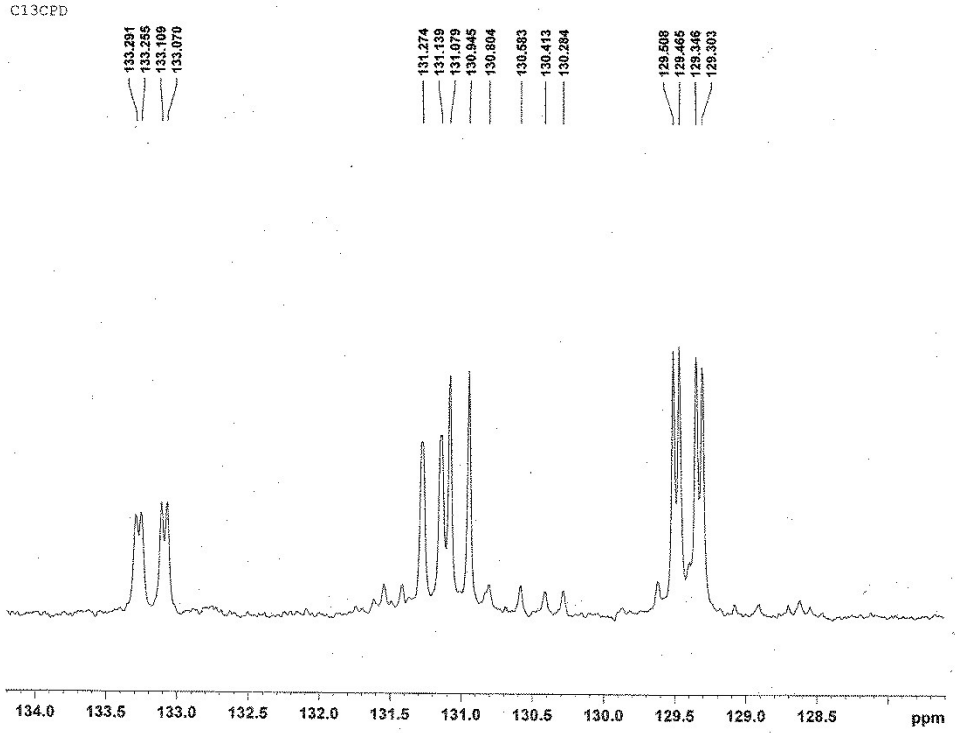
^{31}P NMR ($CDCl_3$ P-H coupling) of **2c**



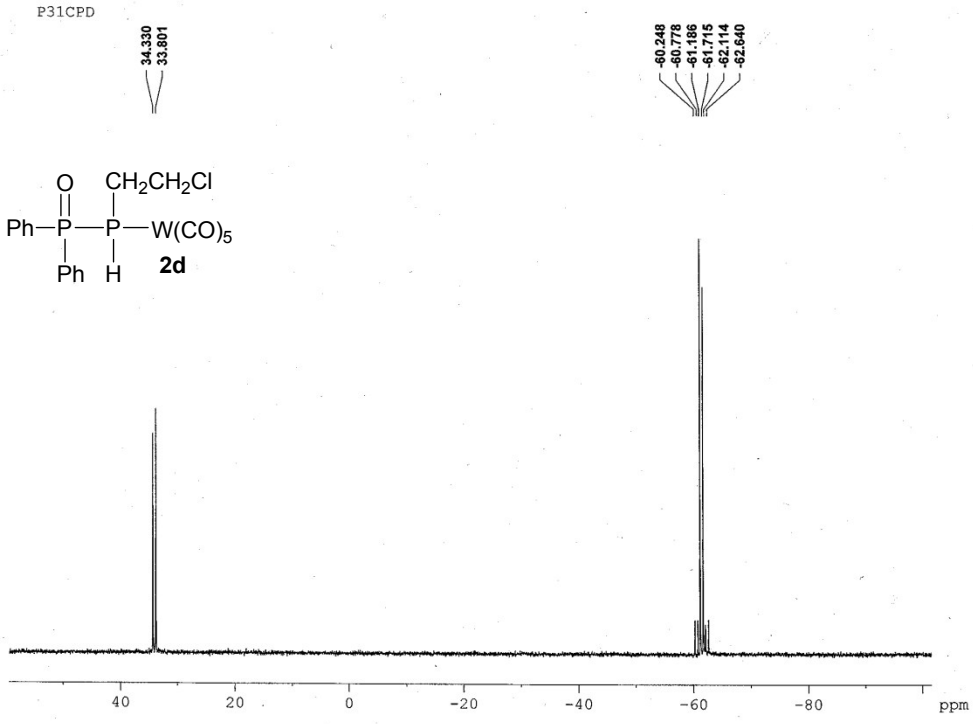
^{1}H NMR ($CDCl_3$) of **2c**



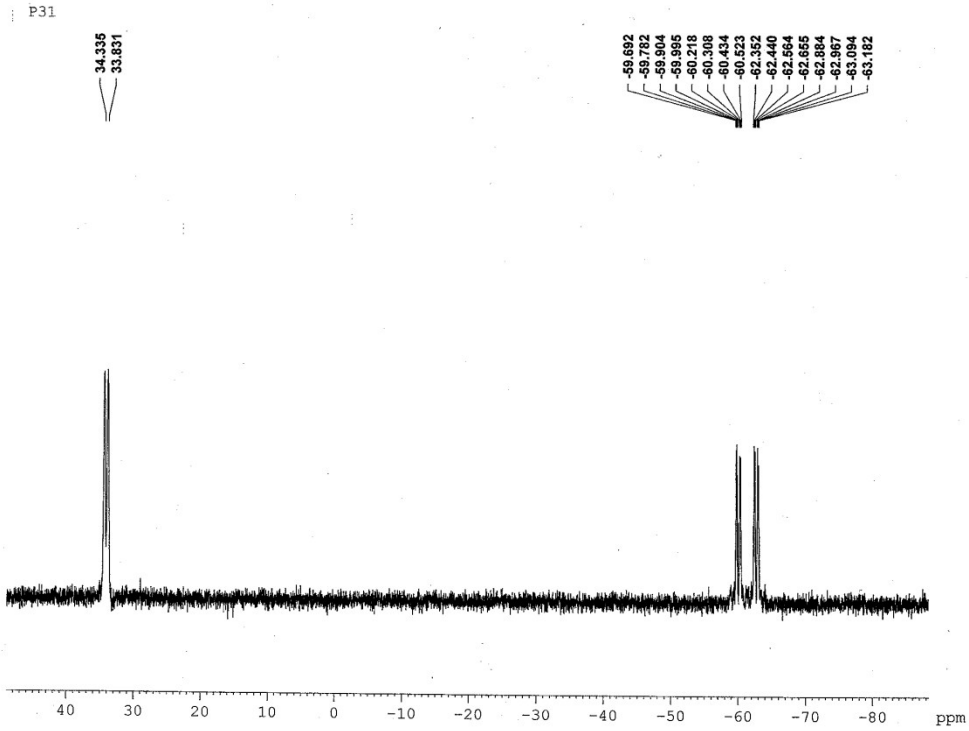
^{13}C NMR ($CDCl_3$) of **2c**



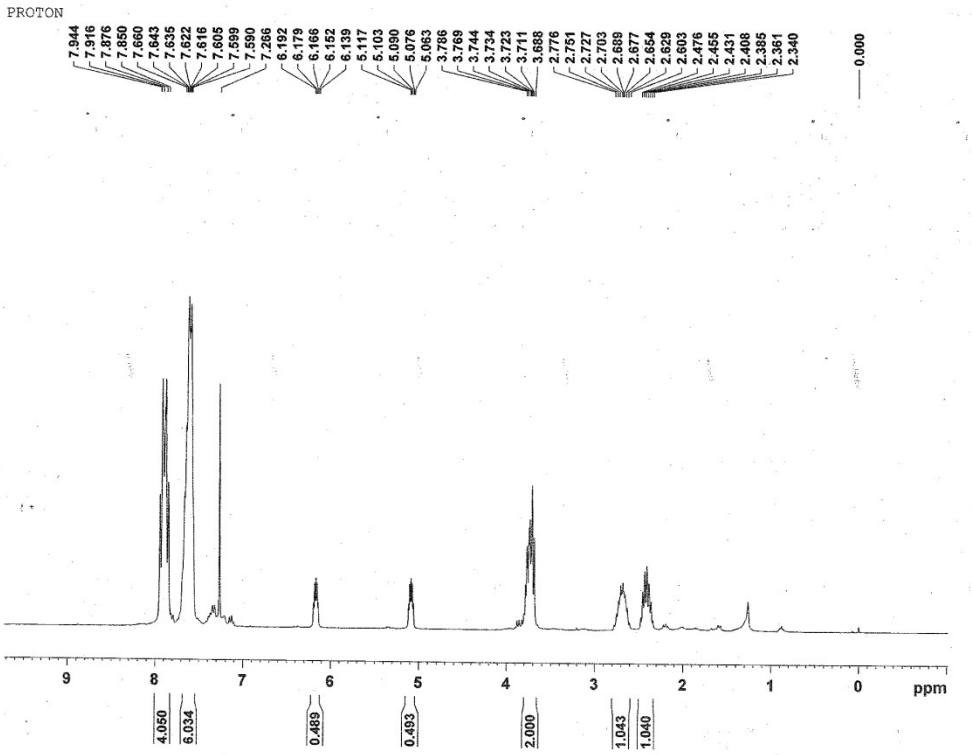
^{13}C NMR ($CDCl_3$) of **2c**



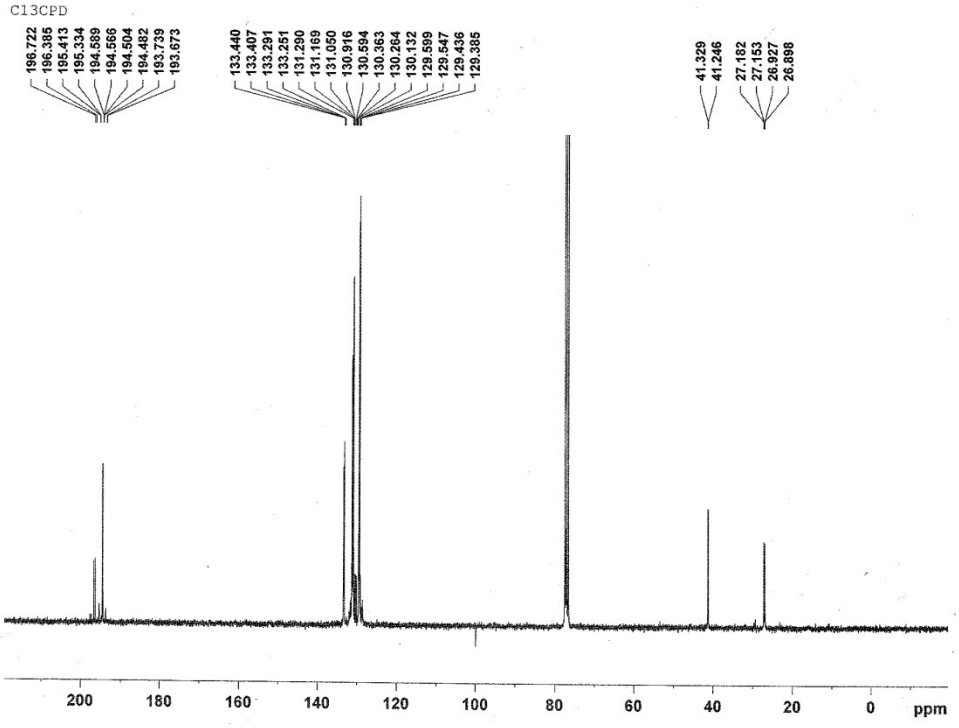
^{31}P CPD NMR ($CDCl_3$) of **2d**



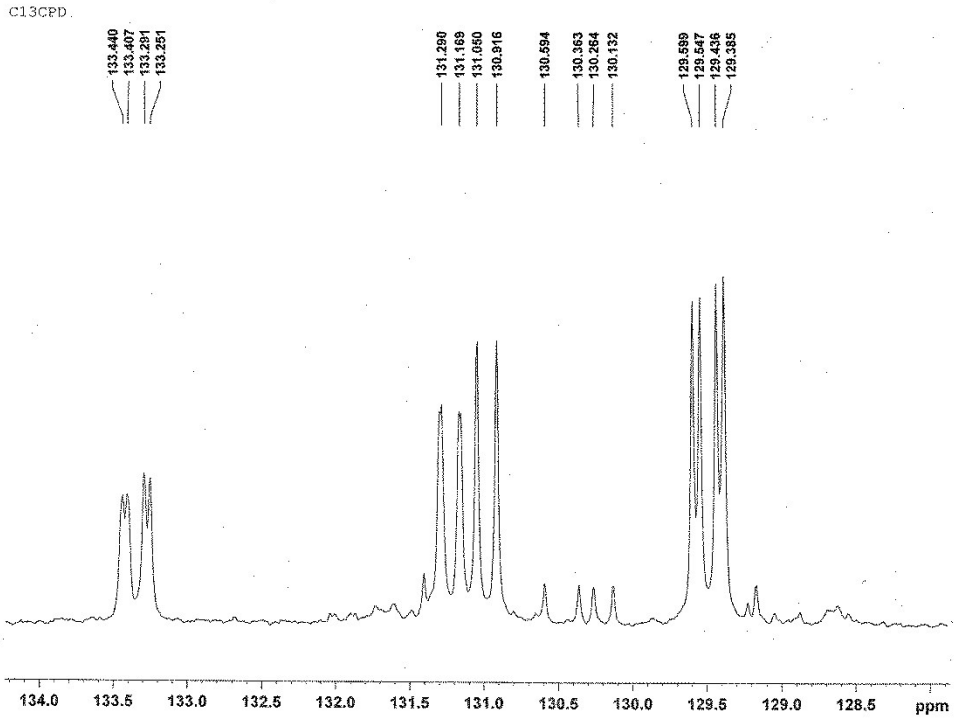
^{31}P NMR ($CDCl_3$ P-H coupling) of **2d**



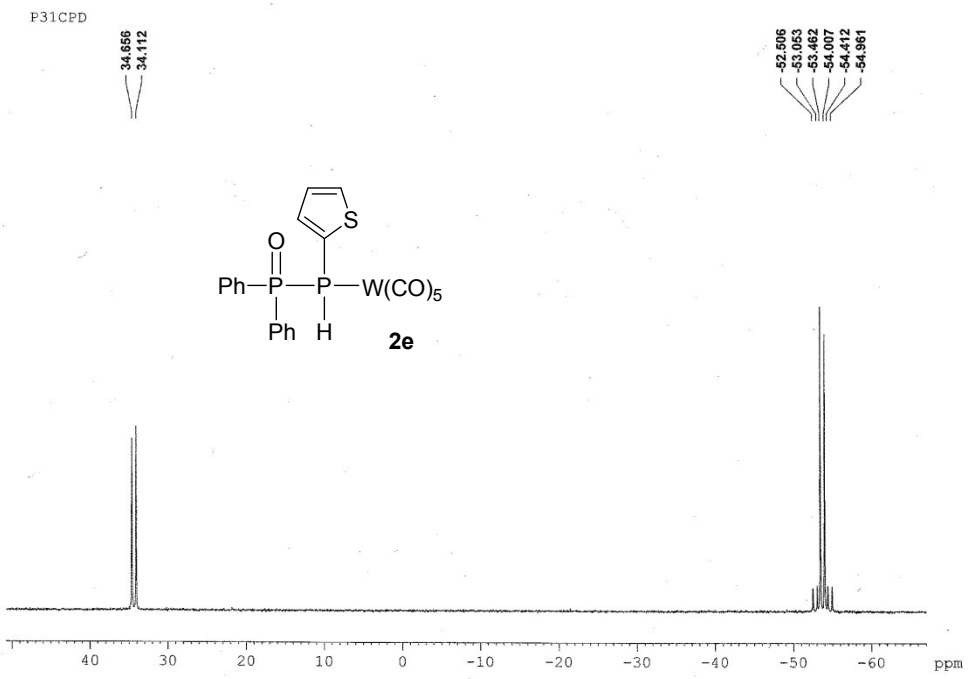
^{1}H NMR ($CDCl_3$) of **2d**



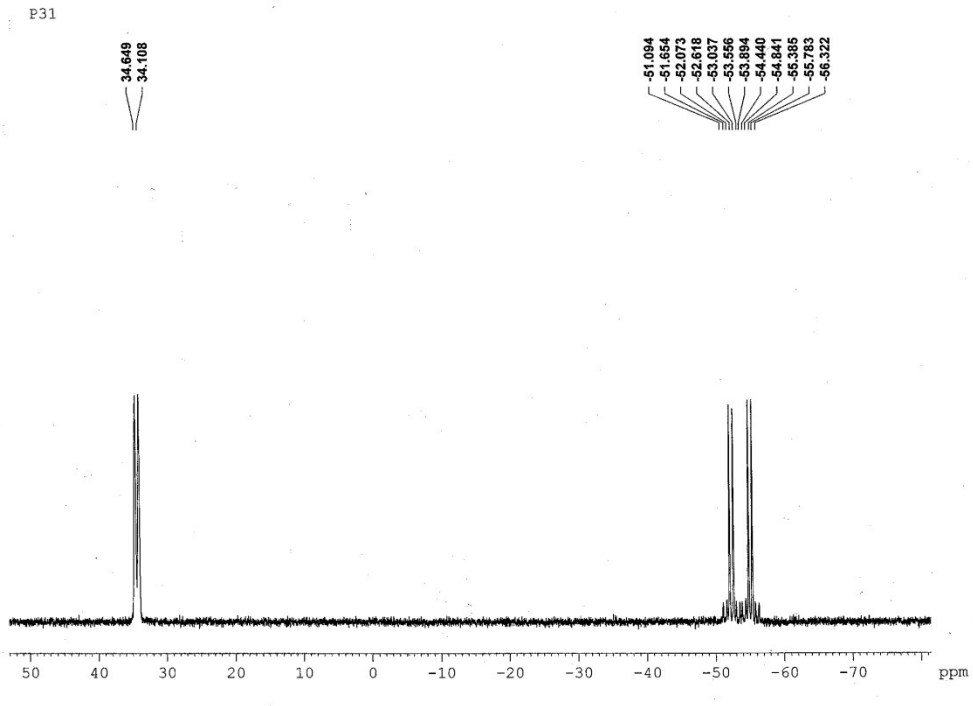
^{13}C NMR ($CDCl_3$) of **2d**



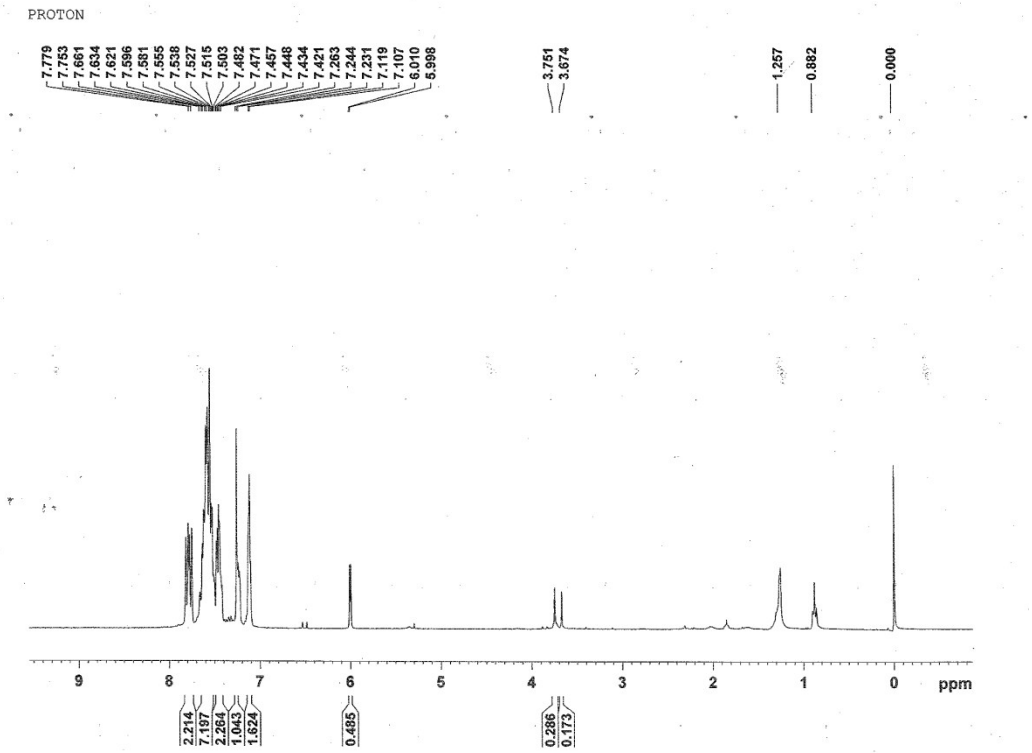
^{13}C NMR ($CDCl_3$) of **2d**



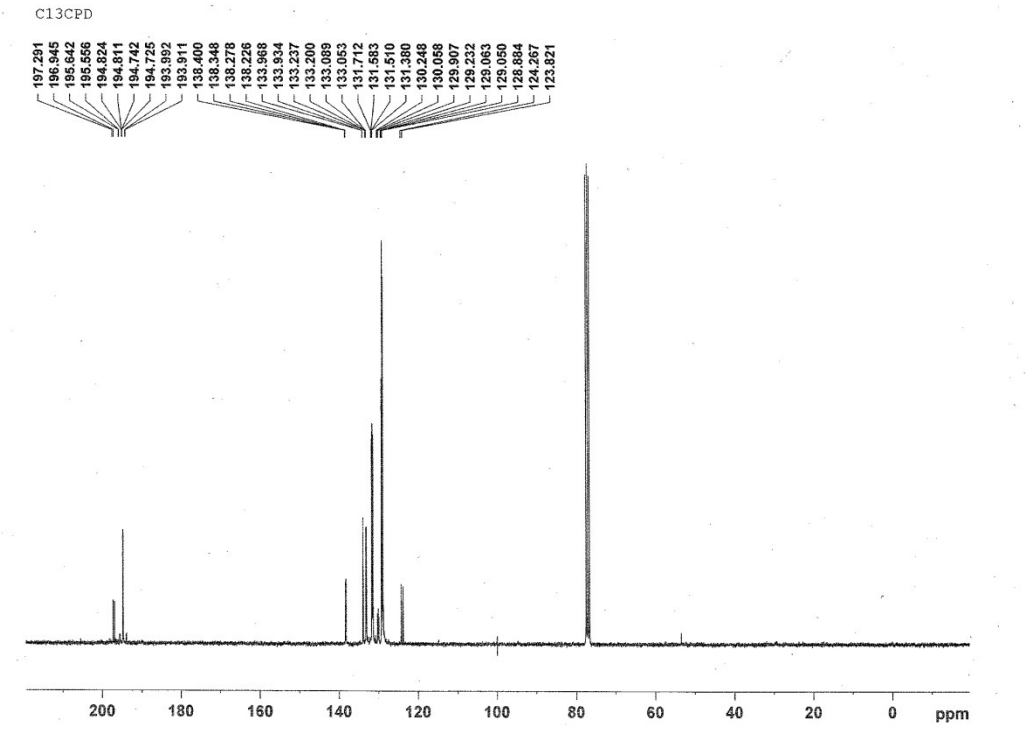
^{31}P CPD NMR ($CDCl_3$) of **2e**



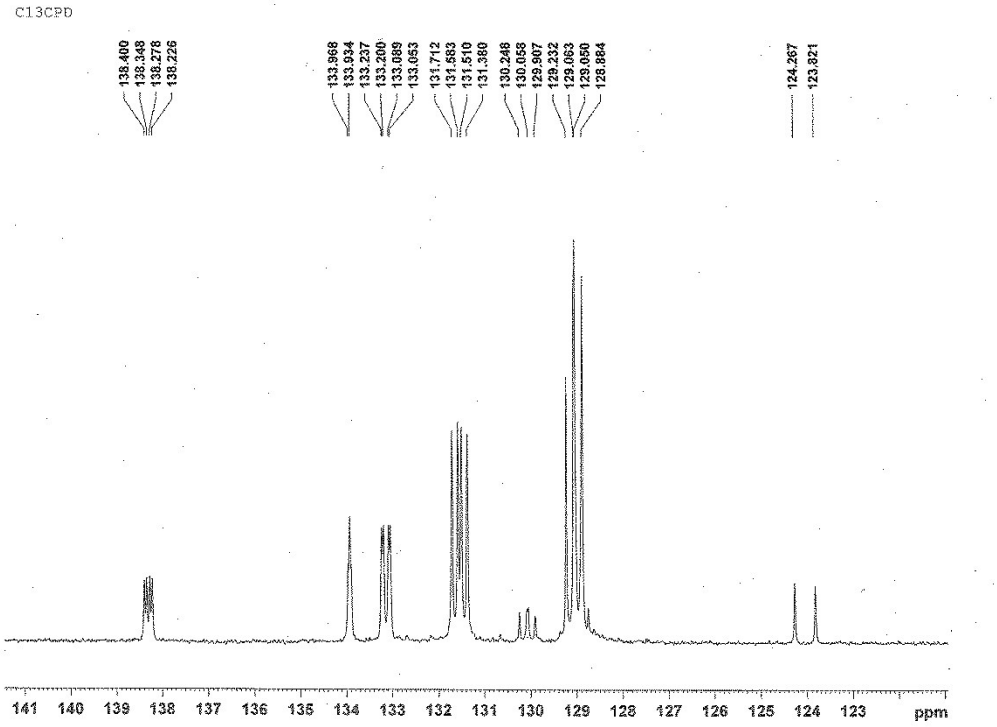
^{31}P NMR ($CDCl_3$ P-H coupling) of **2e**



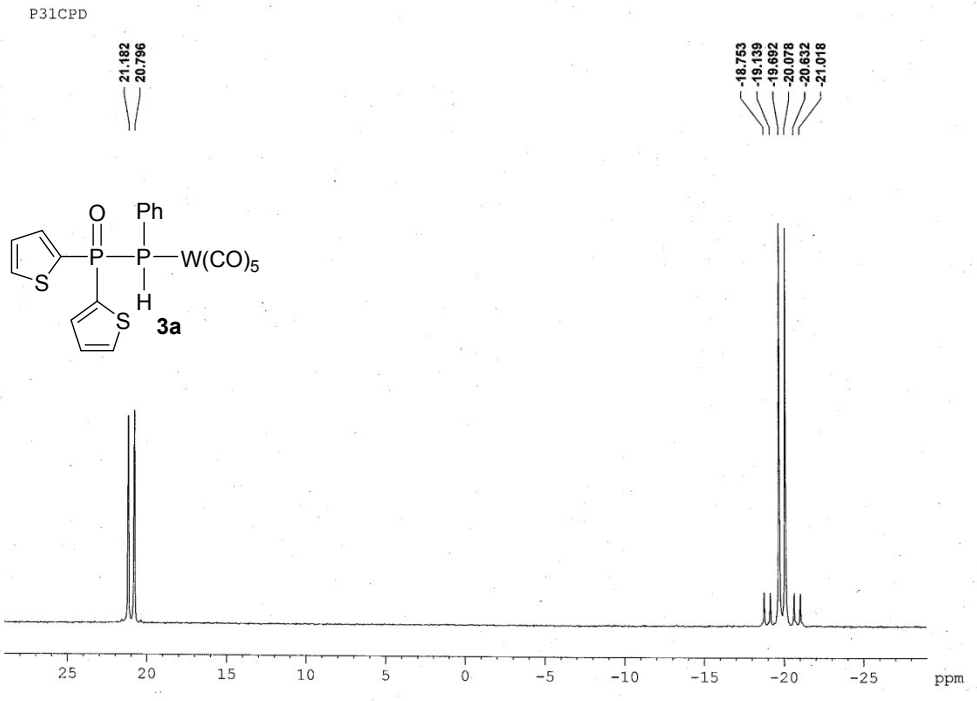
^{1}H NMR ($CDCl_3$) of **2e**



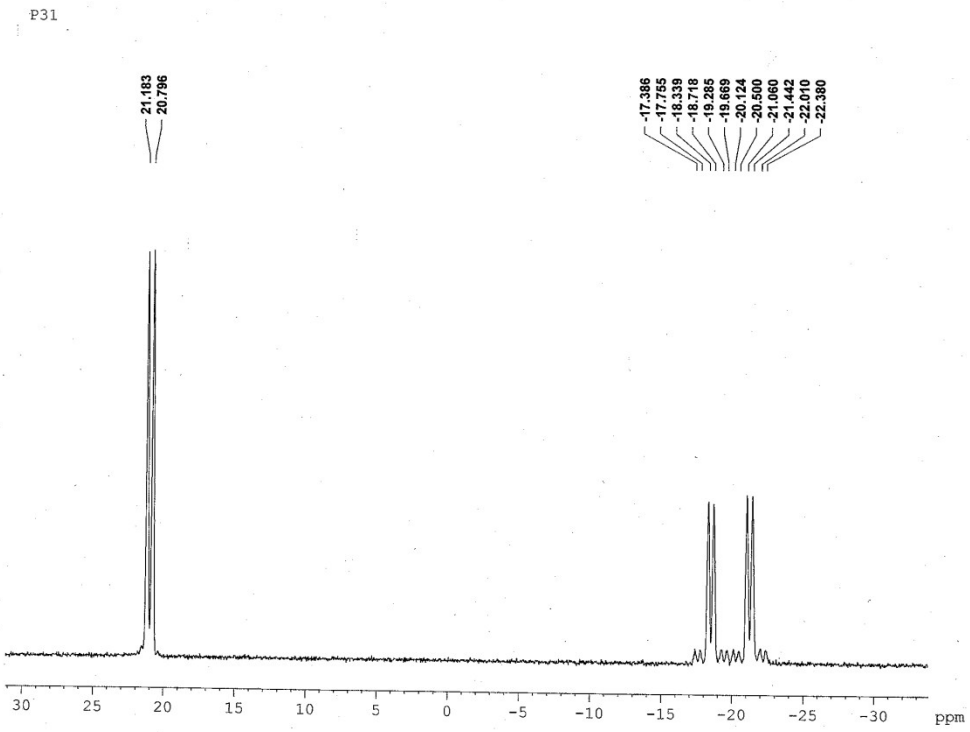
^{13}C NMR ($CDCl_3$) of **2e**



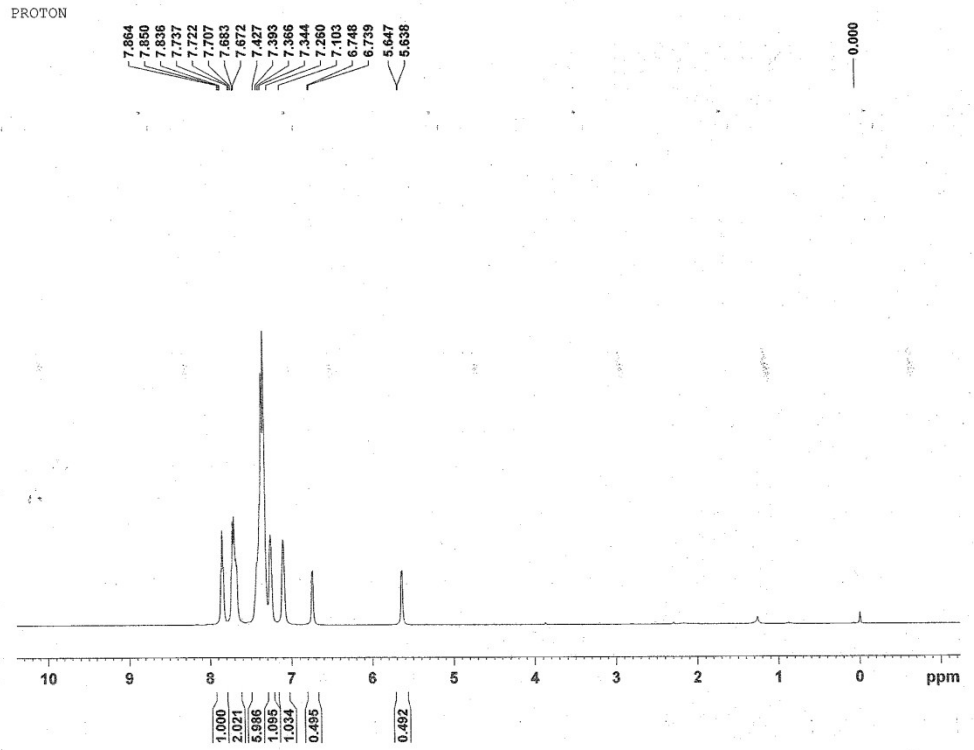
^{13}C NMR ($CDCl_3$) of **2e**



^{31}P CPD NMR ($CDCl_3$) of **2f**

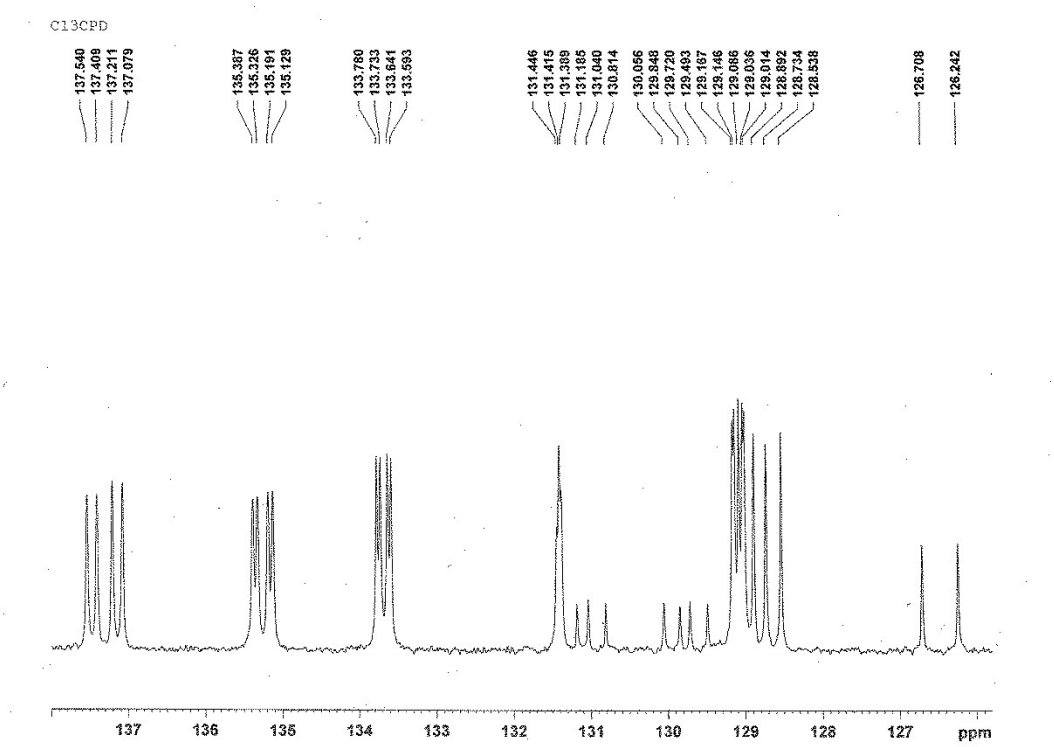


^{31}P NMR ($CDCl_3$ P-H coupling) of **2f**

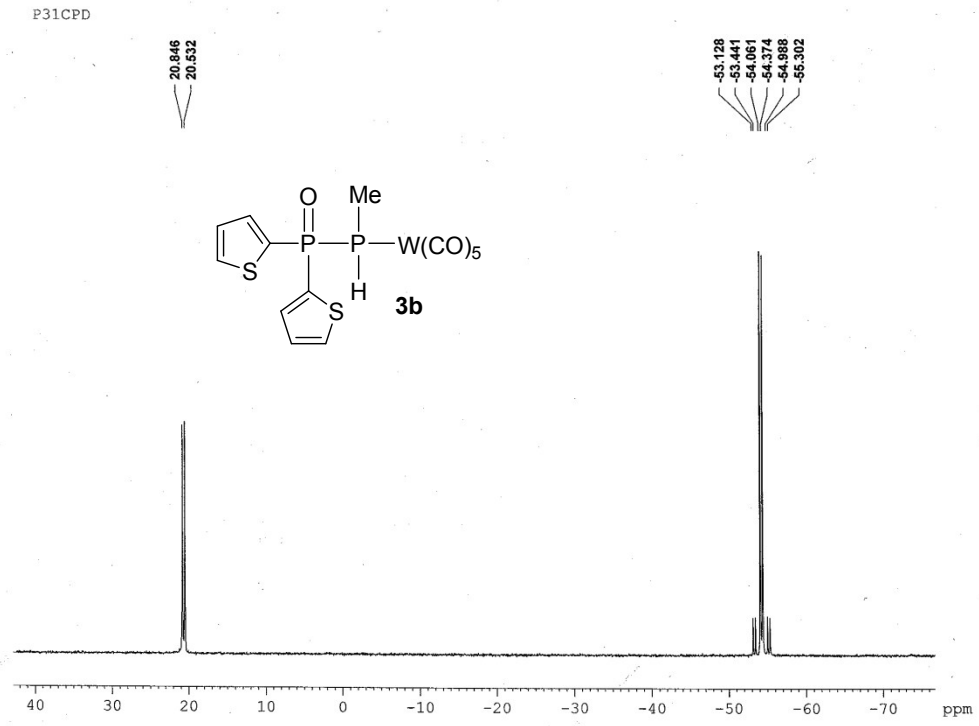


^{1}H NMR ($CDCl_3$) of **2f**

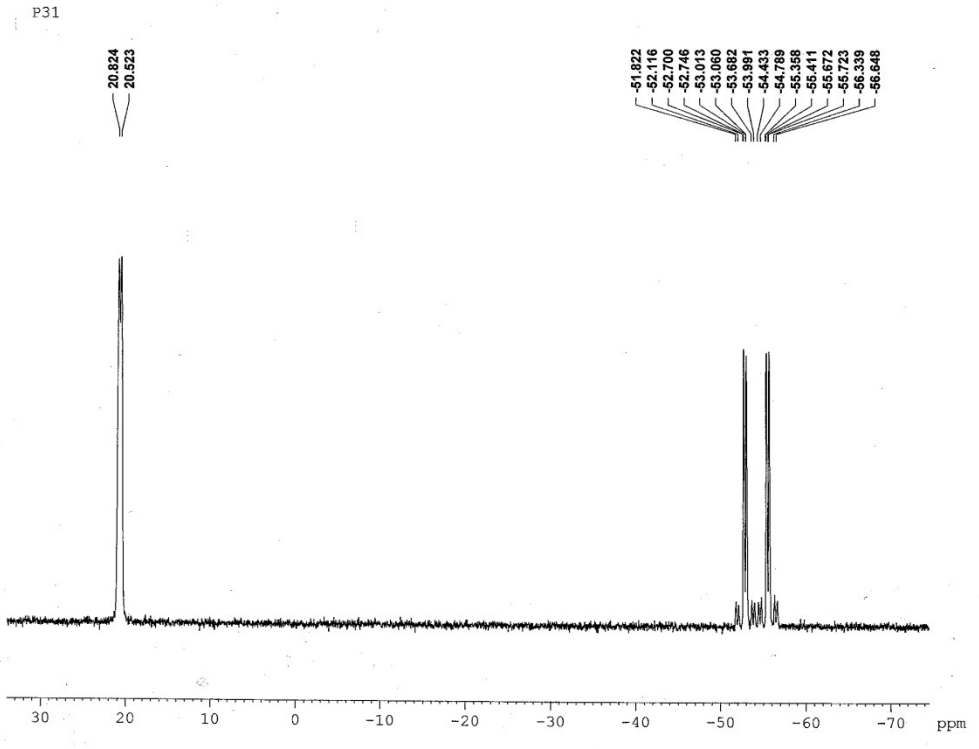
^{13}C NMR ($CDCl_3$) of **2f**



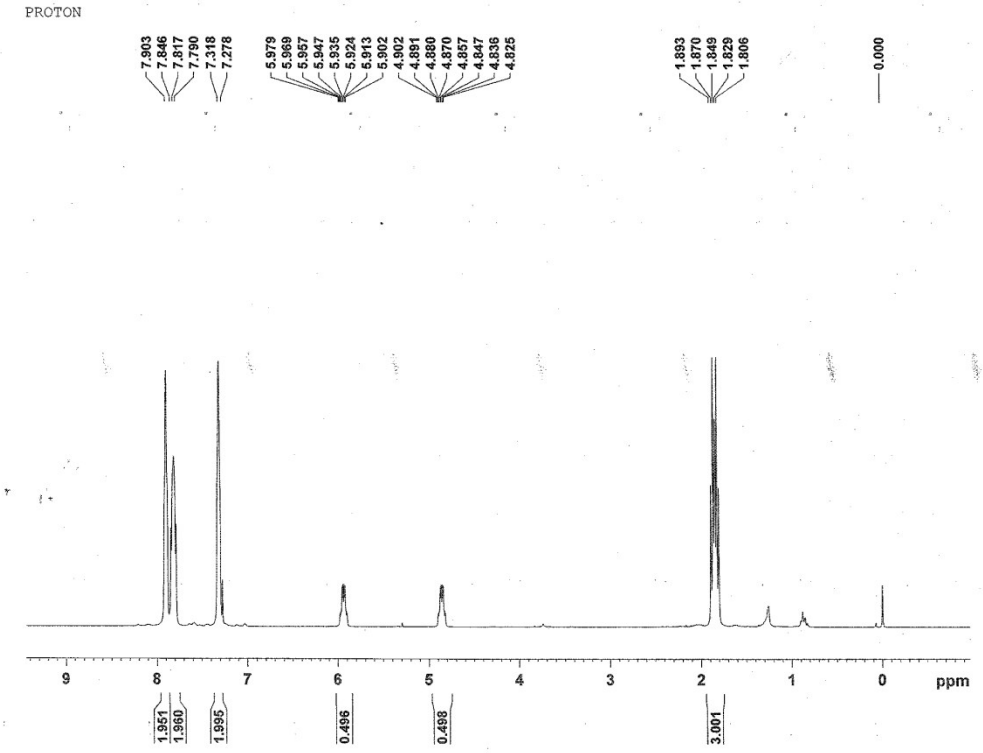
^{13}C NMR ($CDCl_3$) of **2f**



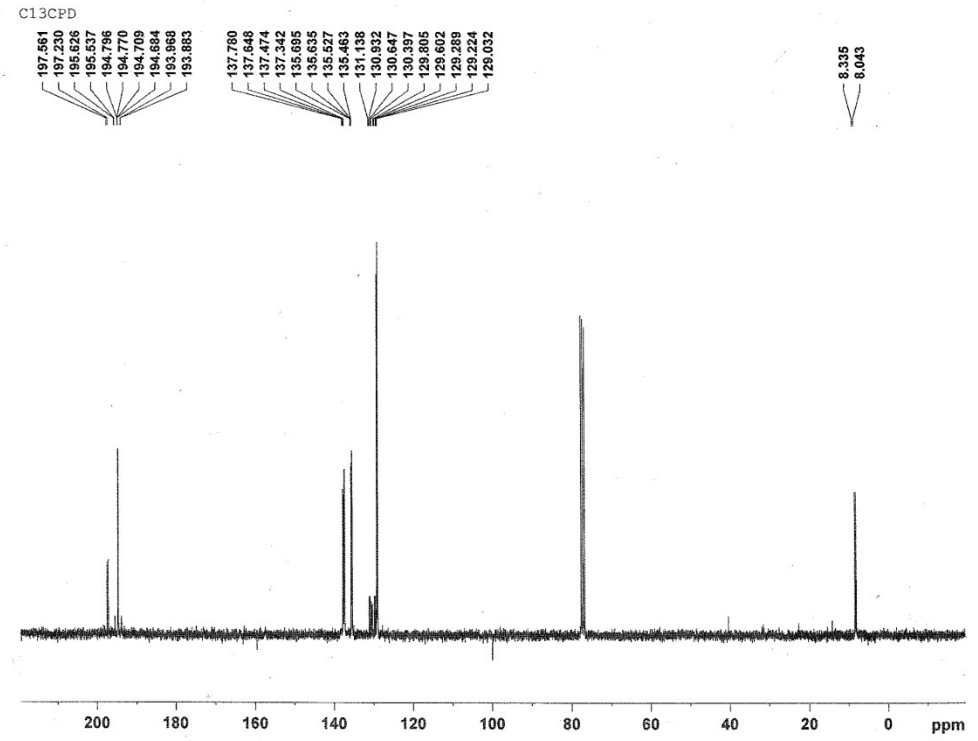
^{31}P CPD NMR ($CDCl_3$) of **2g**



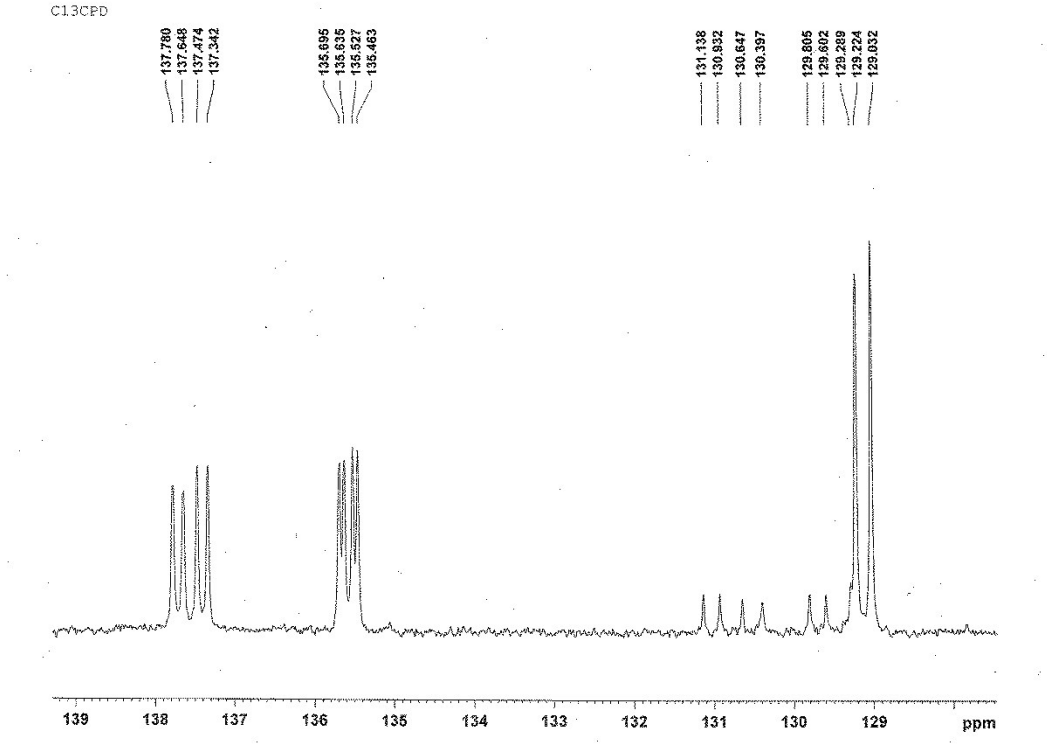
^{31}P NMR ($CDCl_3$ P-H coupling) of **2g**



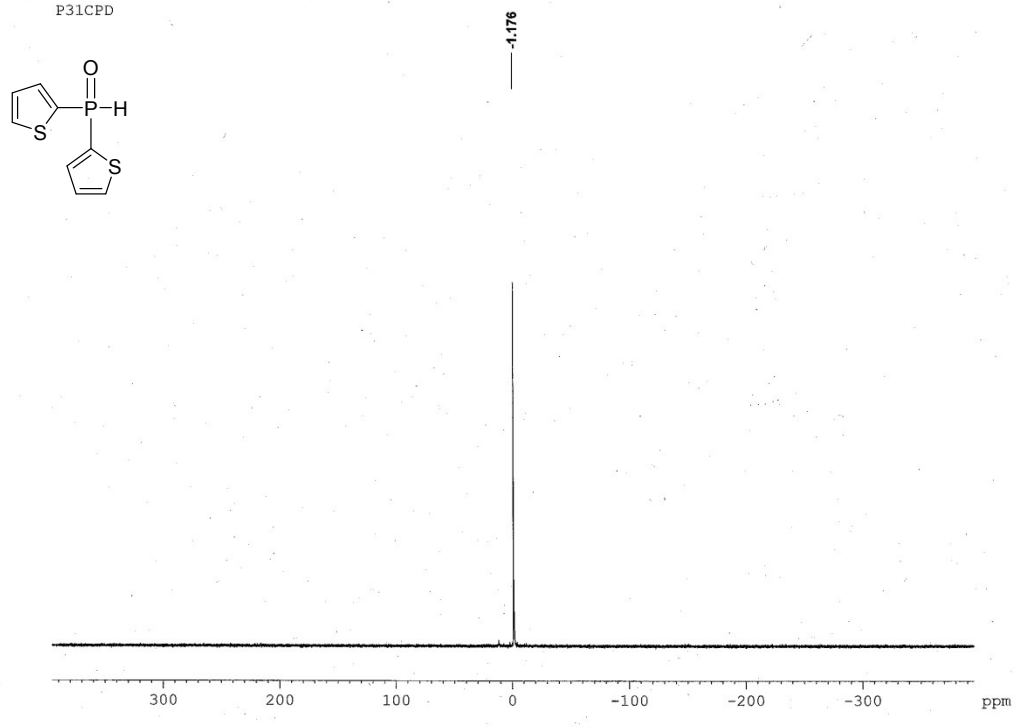
^{1}H NMR ($CDCl_3$) of **2g**



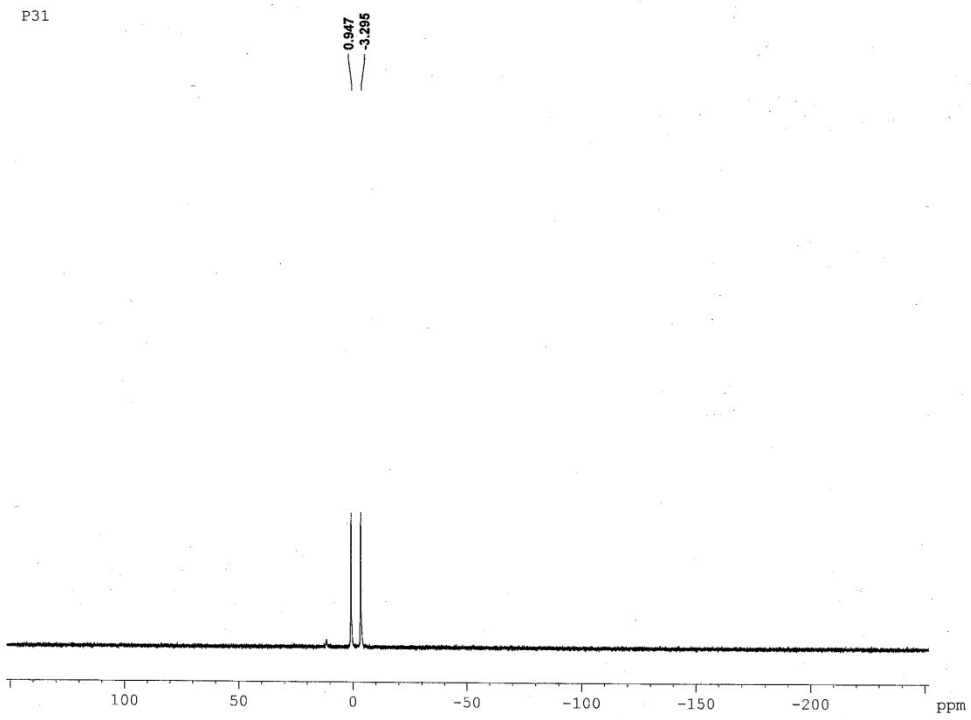
^{13}C NMR ($CDCl_3$) of **2g**



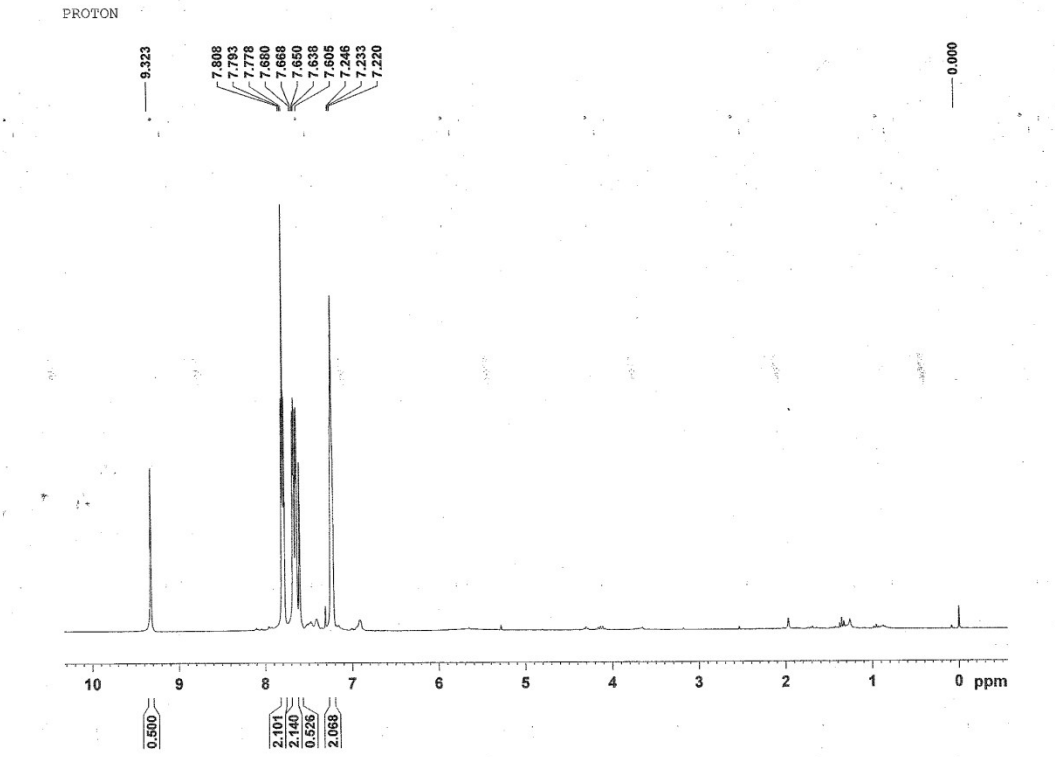
^{13}C NMR ($CDCl_3$) of **2g**



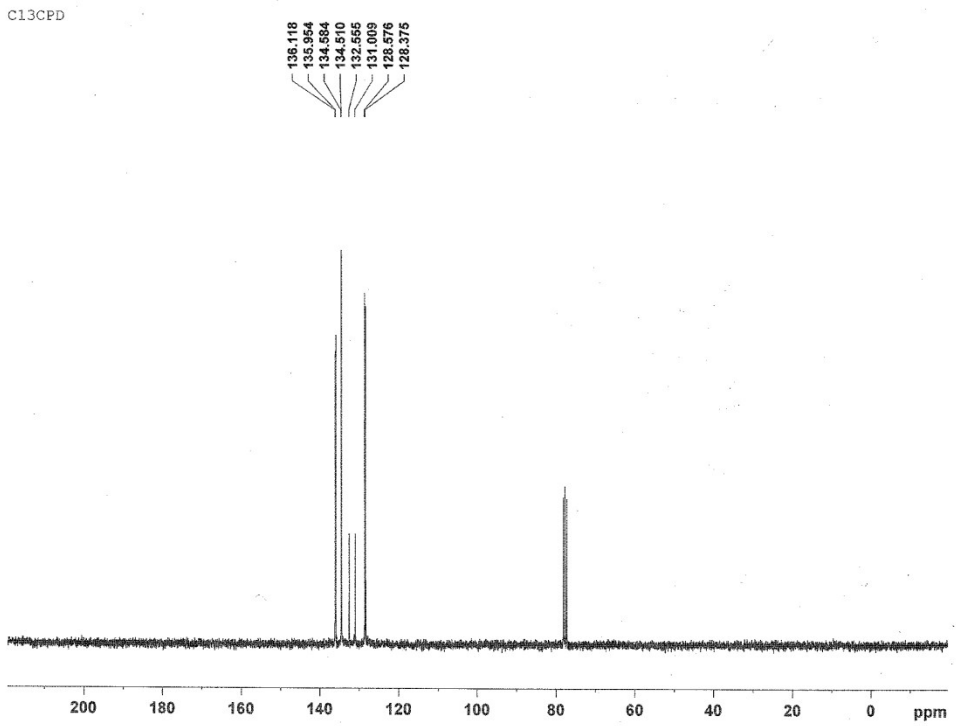
^{31}P CPD NMR ($CDCl_3$) of dithienylphosphine oxide



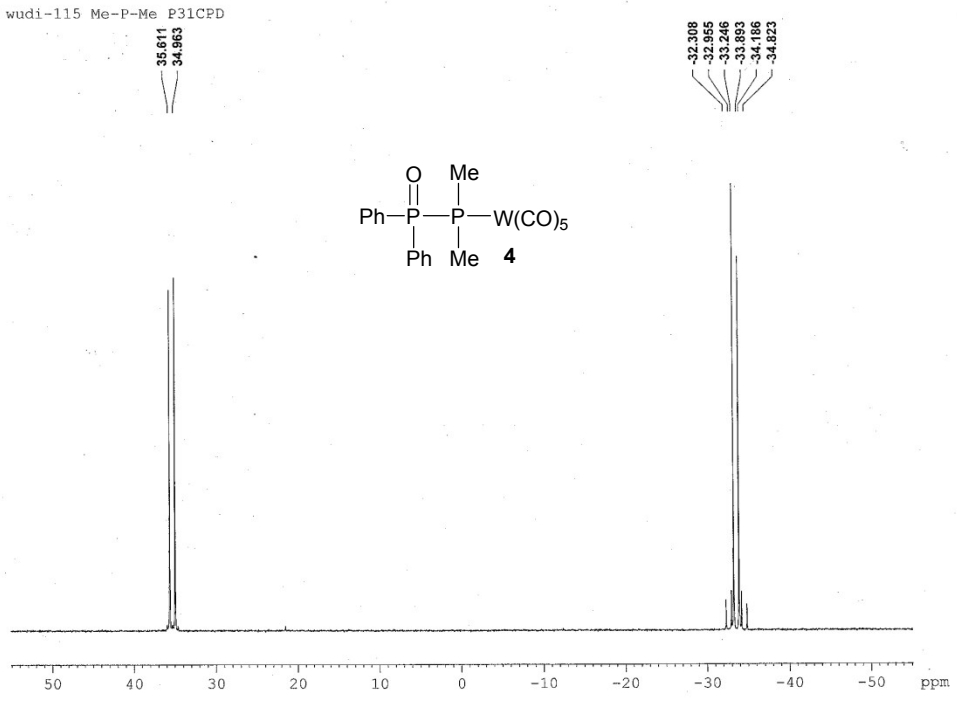
^{31}P NMR ($CDCl_3$ P-H coupling) of dithienylphosphine oxide



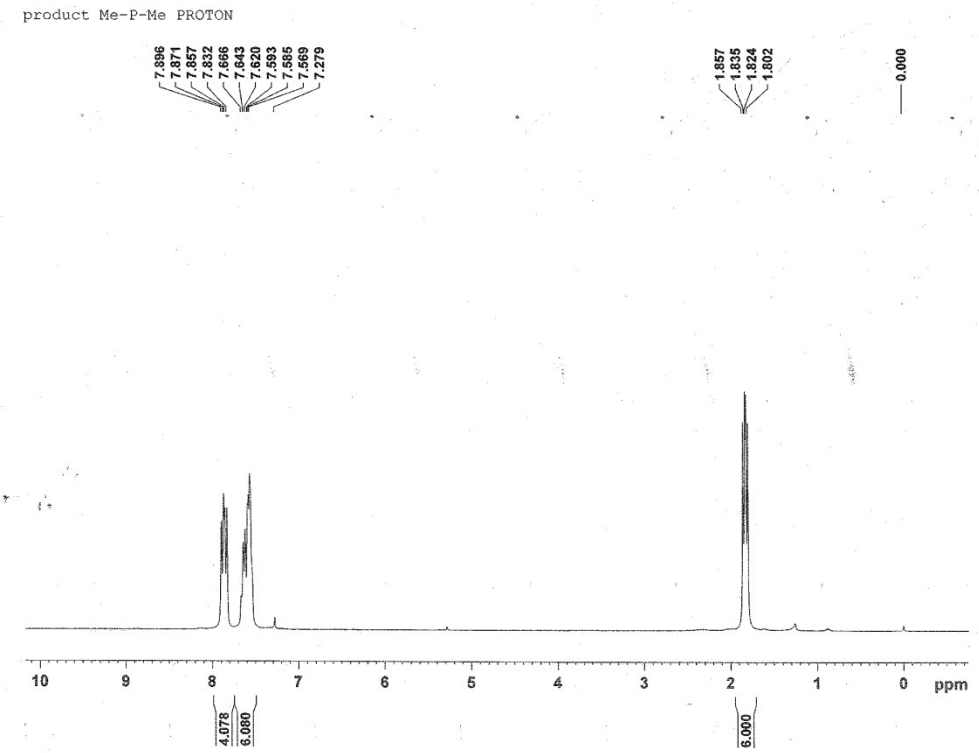
^{1}H NMR ($CDCl_3$) of dithienylphosphine oxide



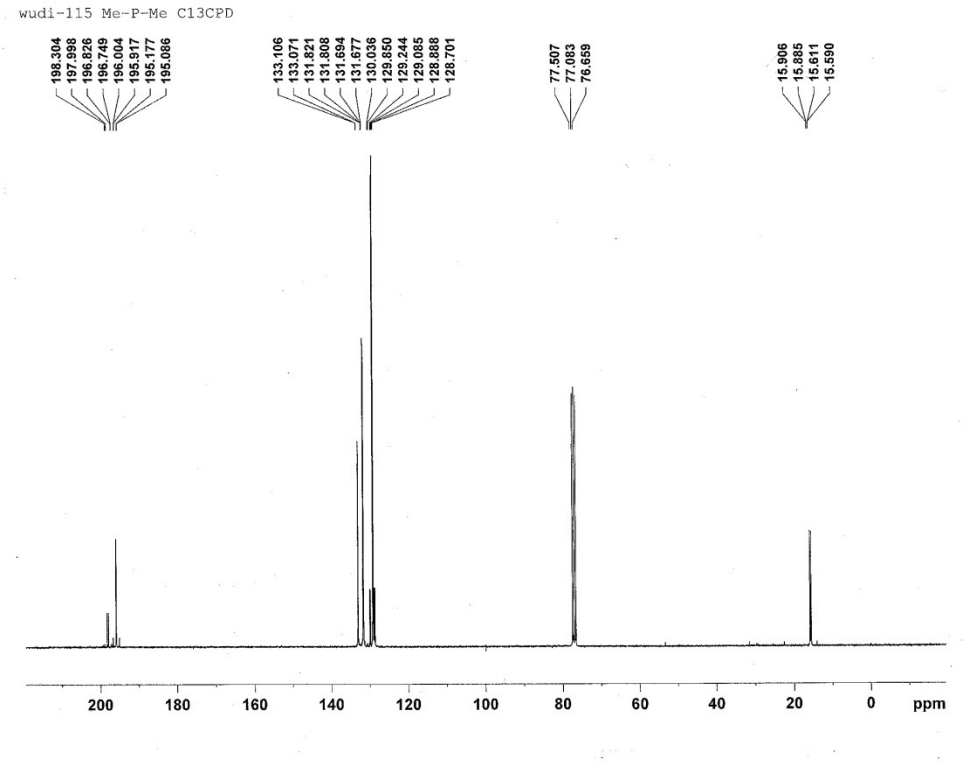
^{13}C NMR ($CDCl_3$) of dithienylphosphine oxide



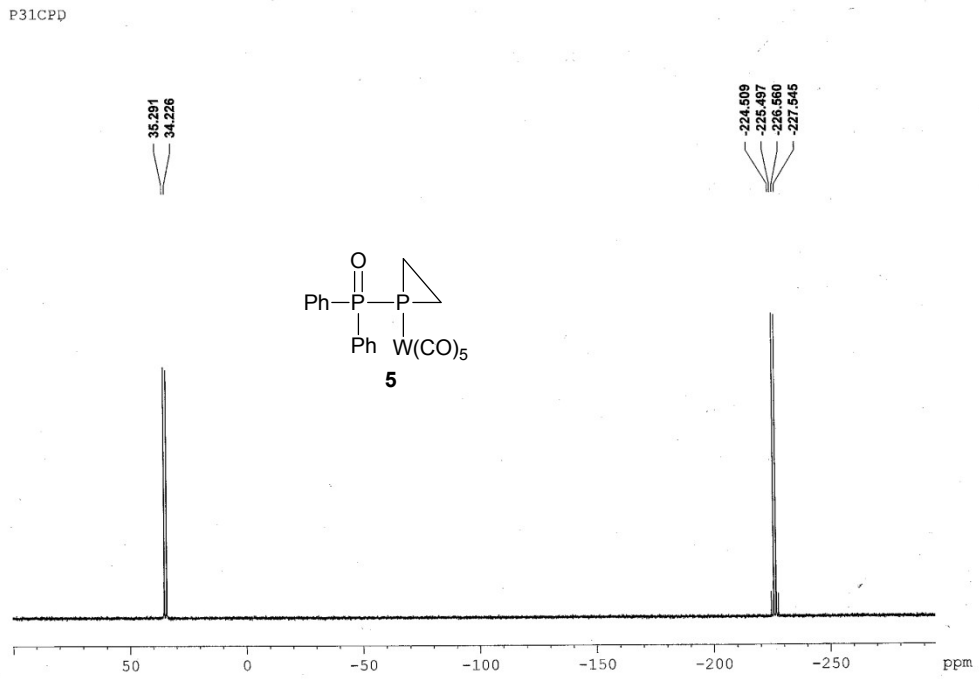
^{31}P CPD NMR ($CDCl_3$) of **4**



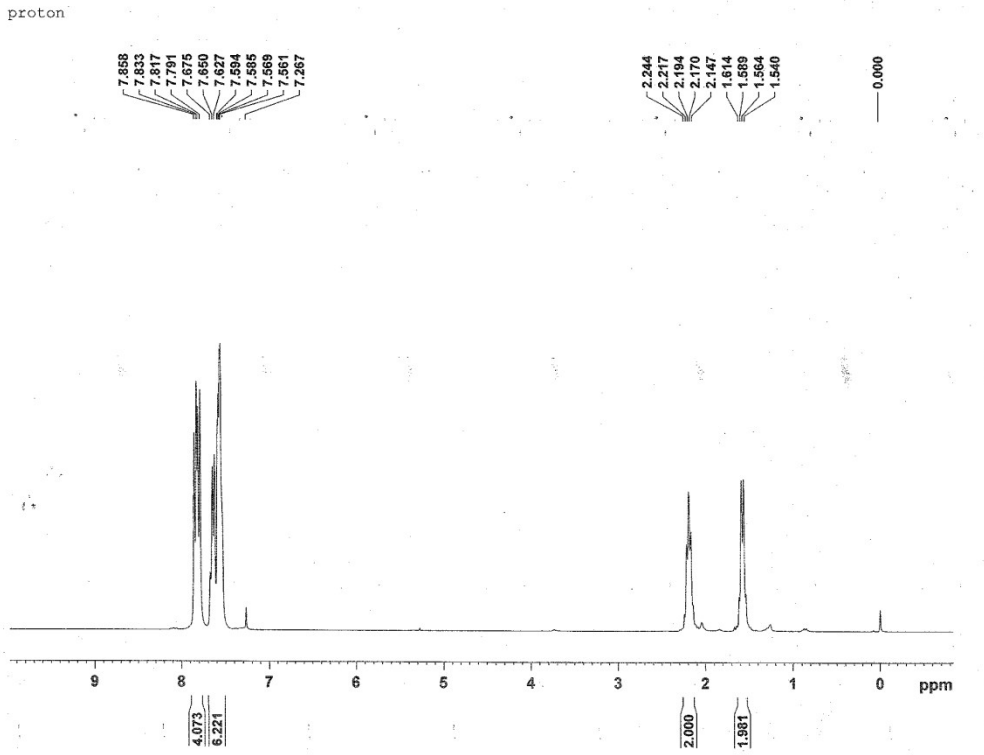
^{1}H NMR ($CDCl_3$) of **4**



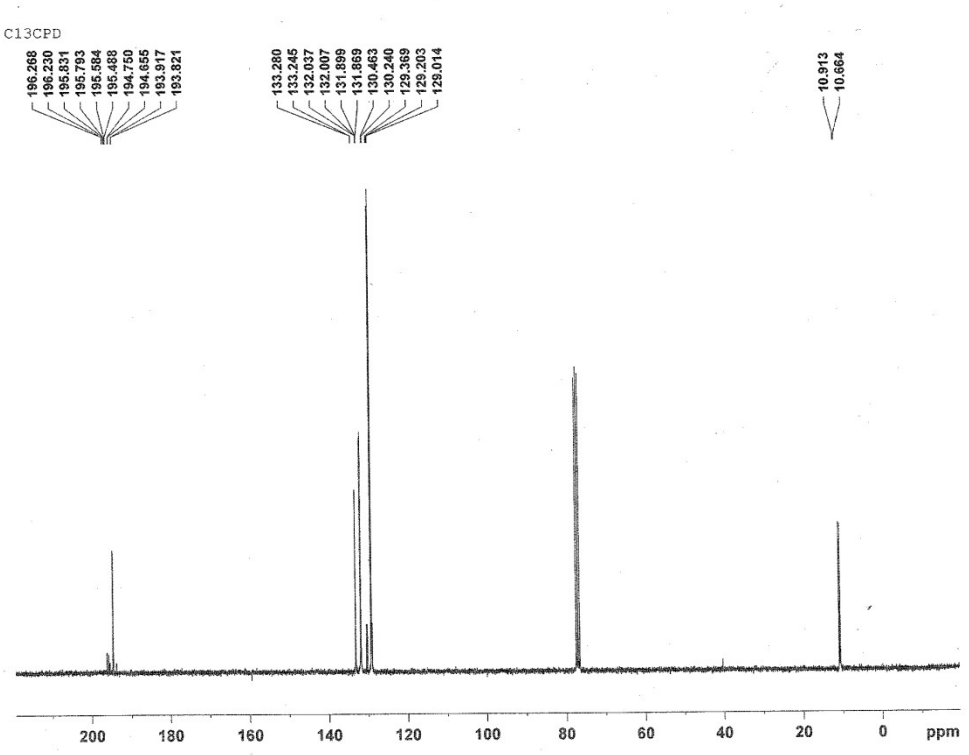
^{13}C NMR ($CDCl_3$) of **4**



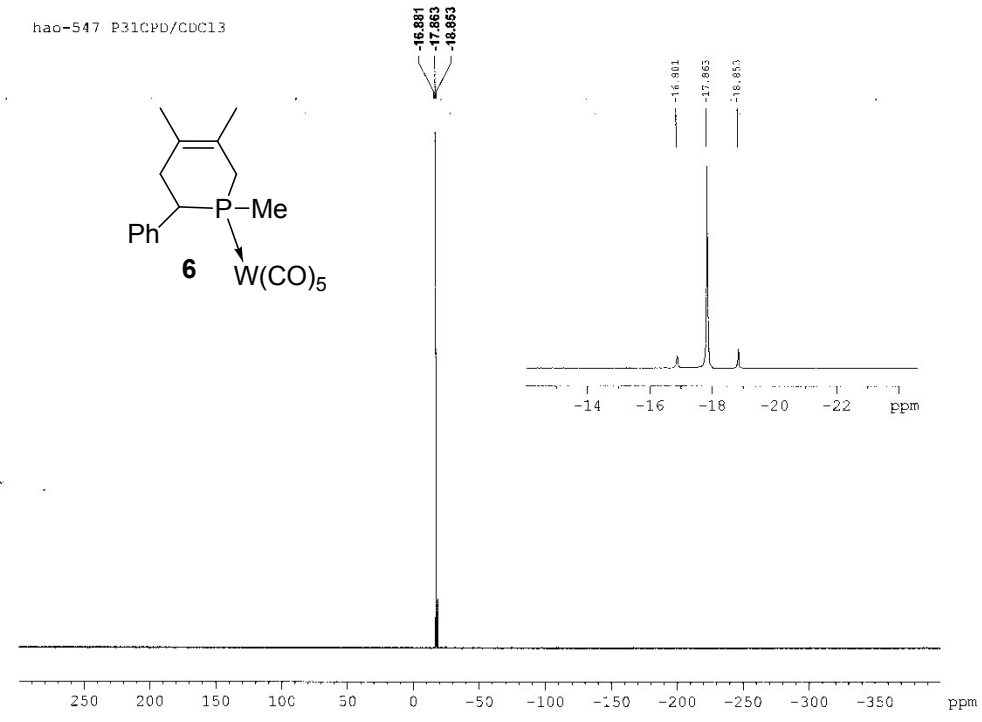
^{31}P CPD NMR ($CDCl_3$) of **5**



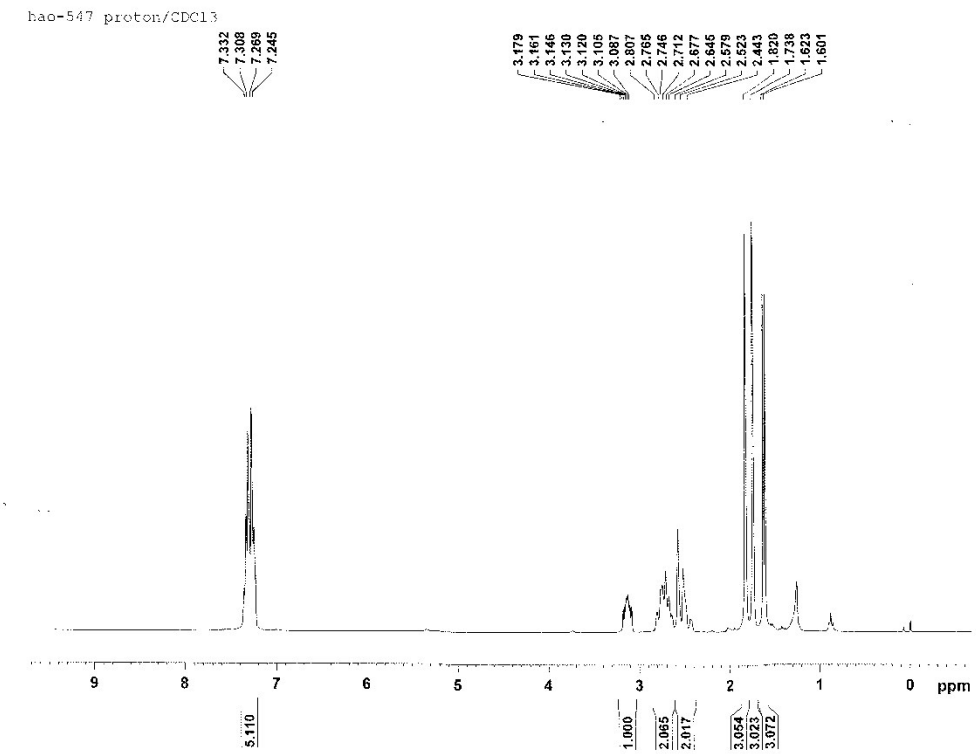
^{1}H NMR ($CDCl_3$) of **5**



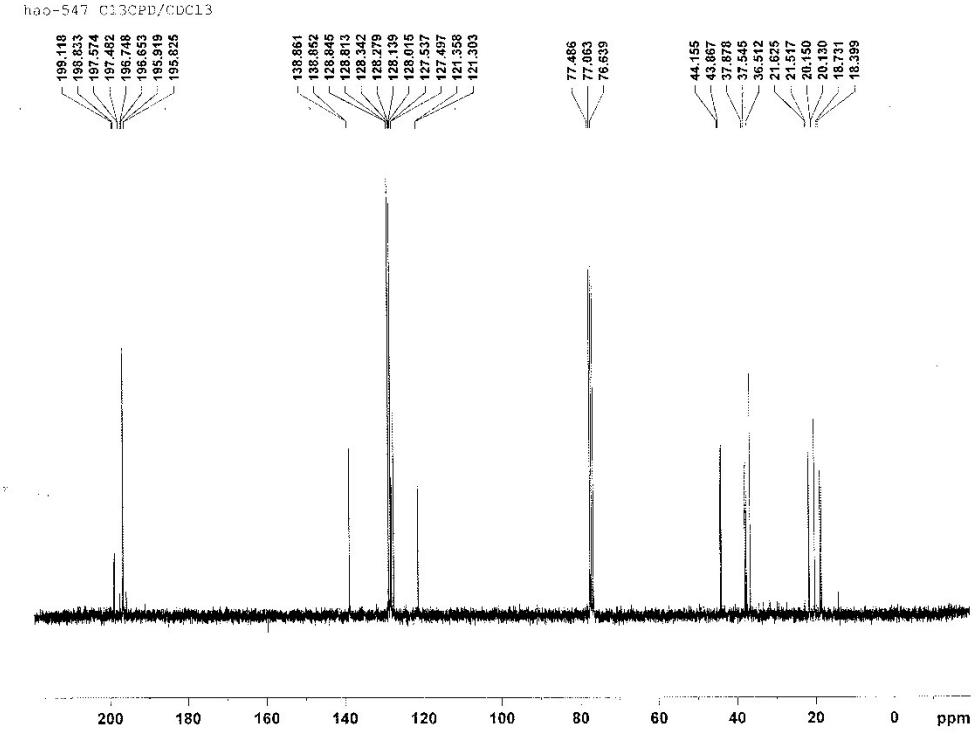
^{13}C NMR ($CDCl_3$) of **5**



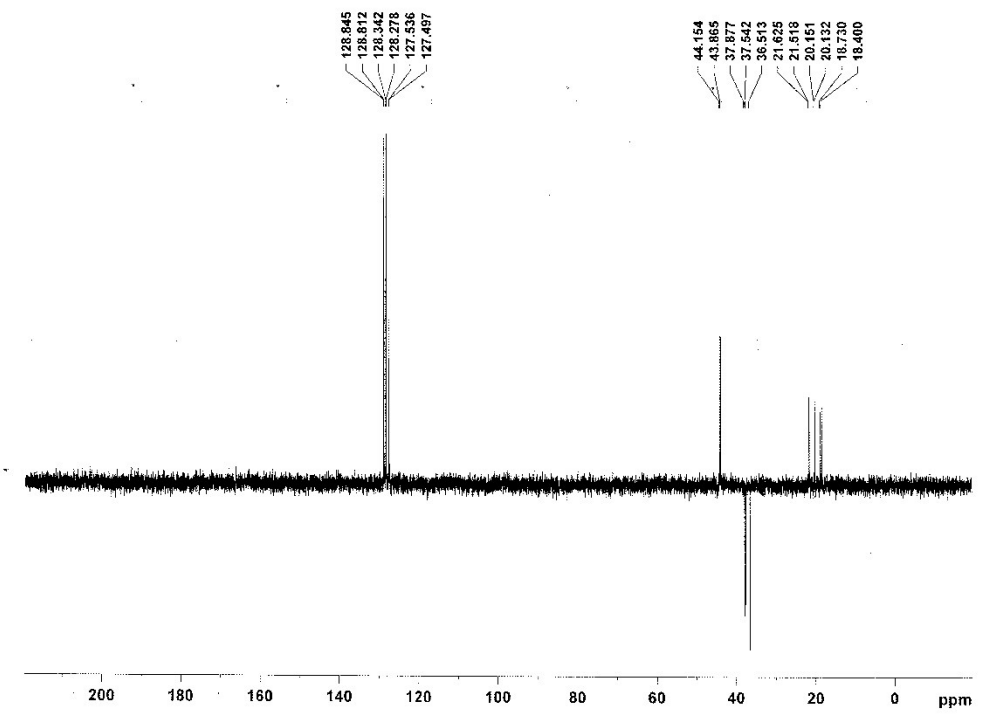
^{31}P CPD NMR ($CDCl_3$) of **6**



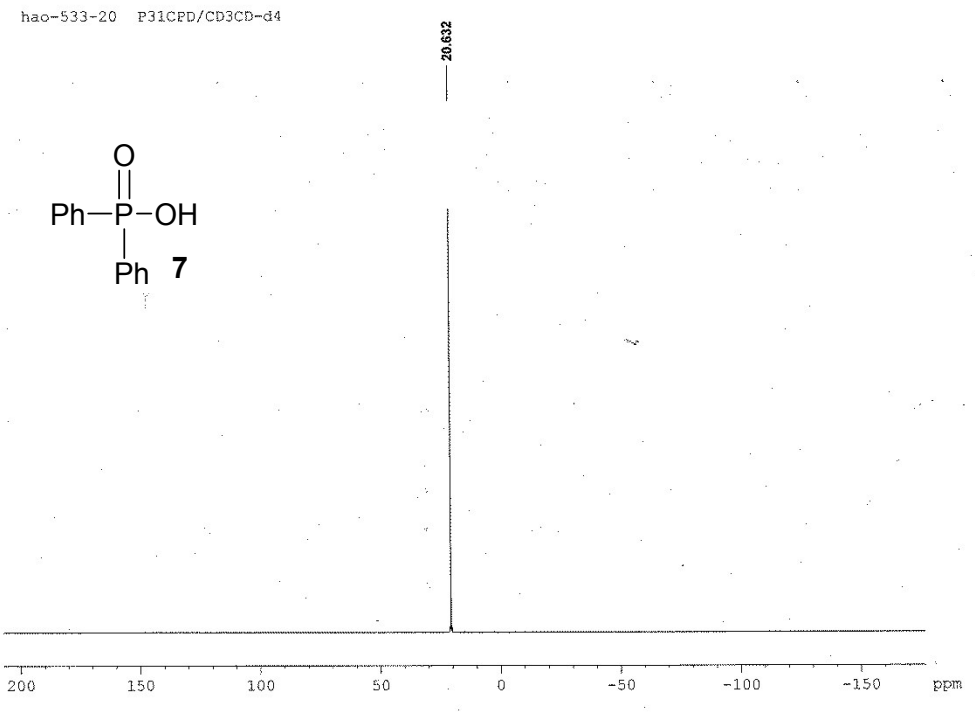
^{1}H NMR ($CDCl_3$) of **6**



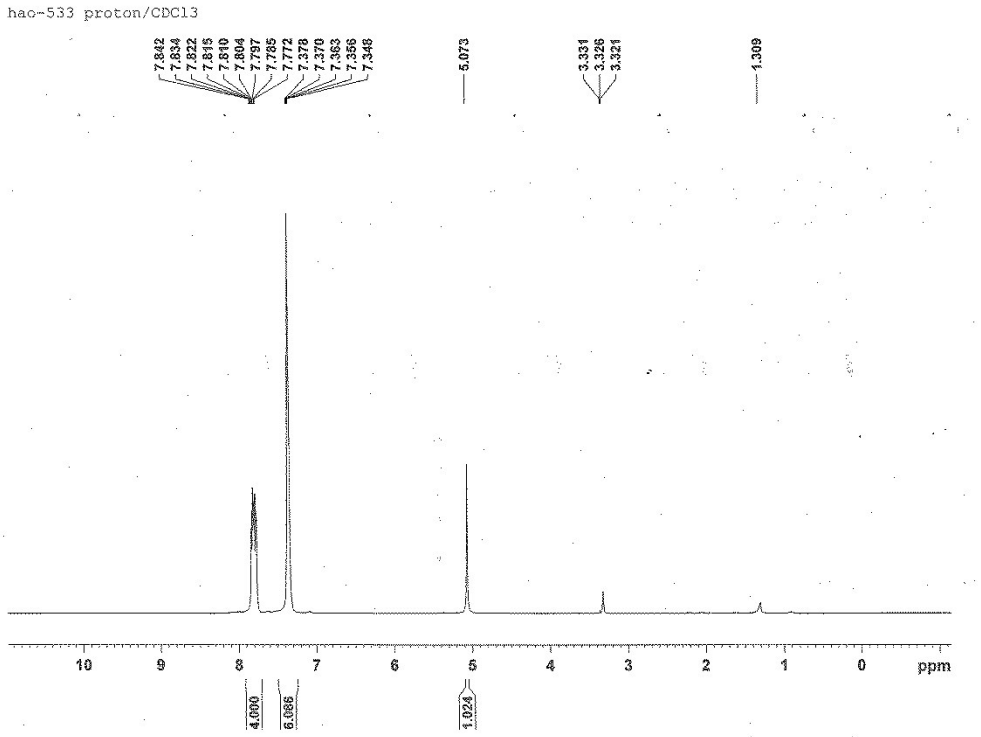
^{13}C NMR ($CDCl_3$) of **6**



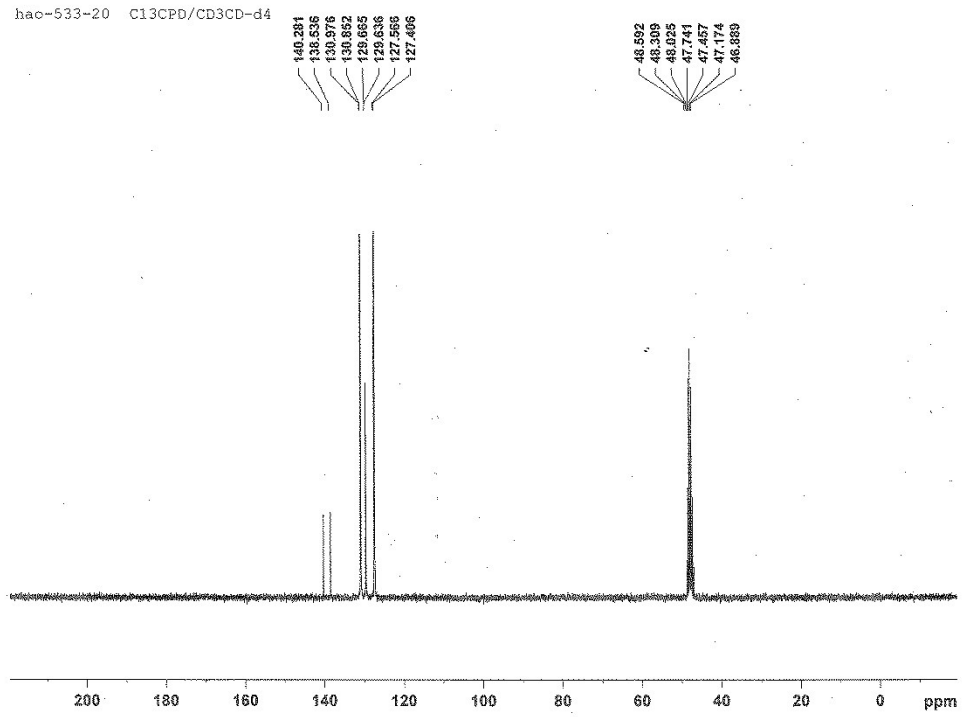
^{135}Dept NMR ($CDCl_3$) of **6**



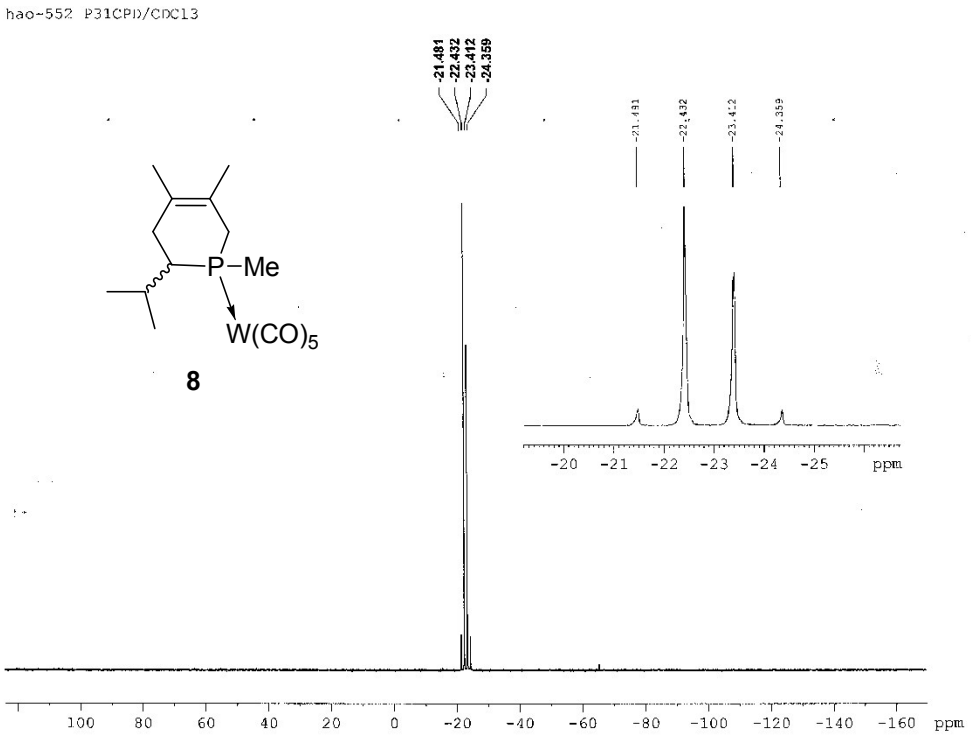
^{31}P CPD NMR ($CDCl_3$) of **7**



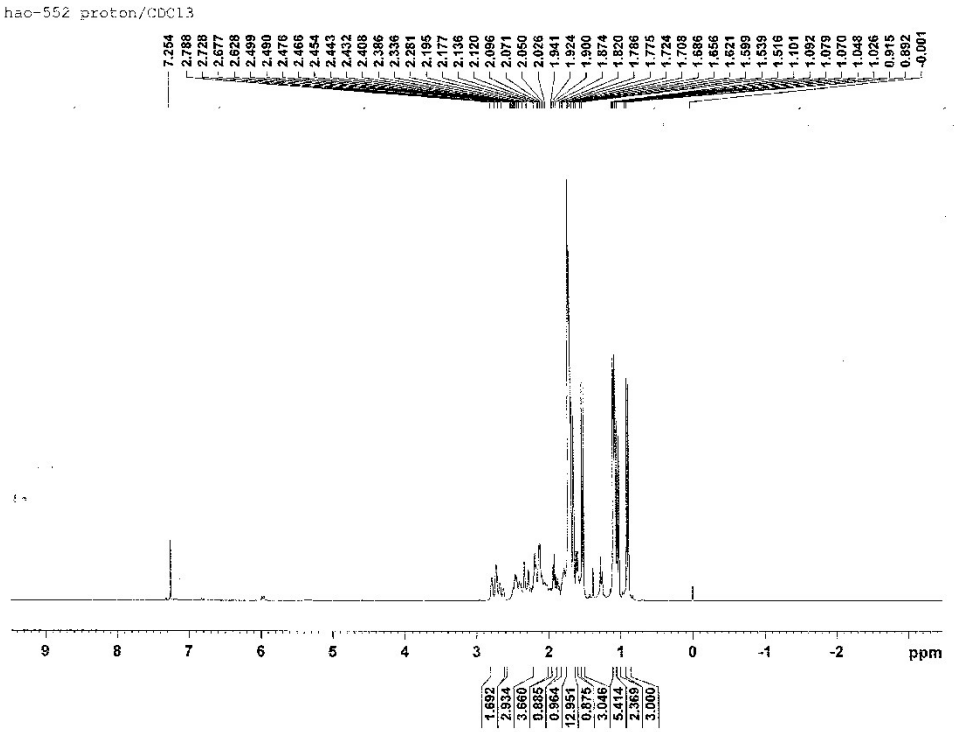
^{1}H NMR ($CDCl_3$) of **7**



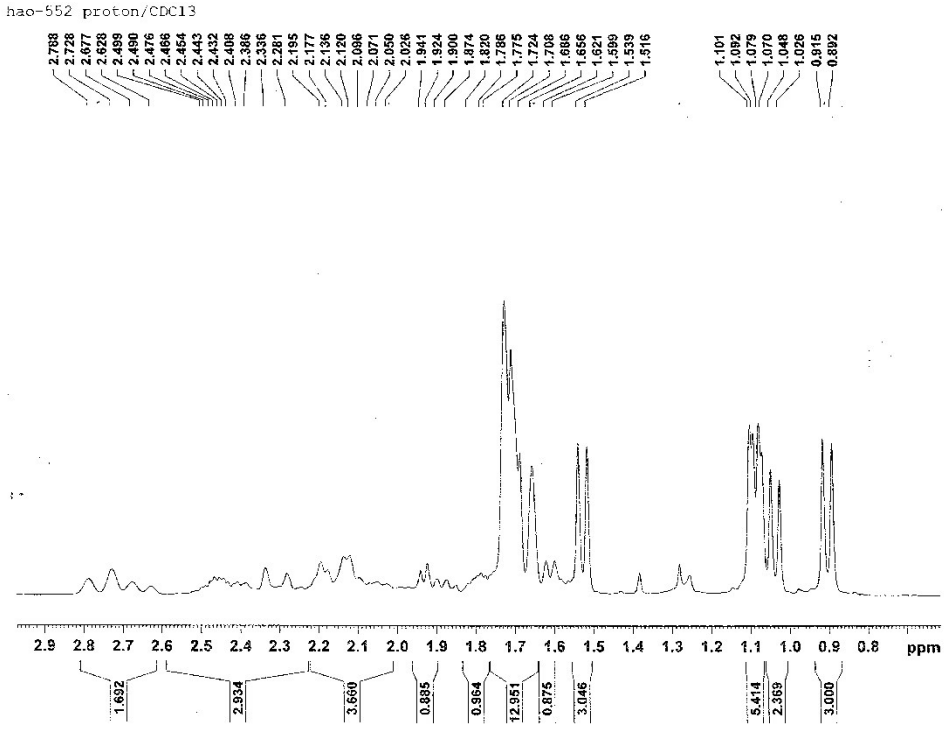
^{13}C NMR ($CDCl_3$) of **7**



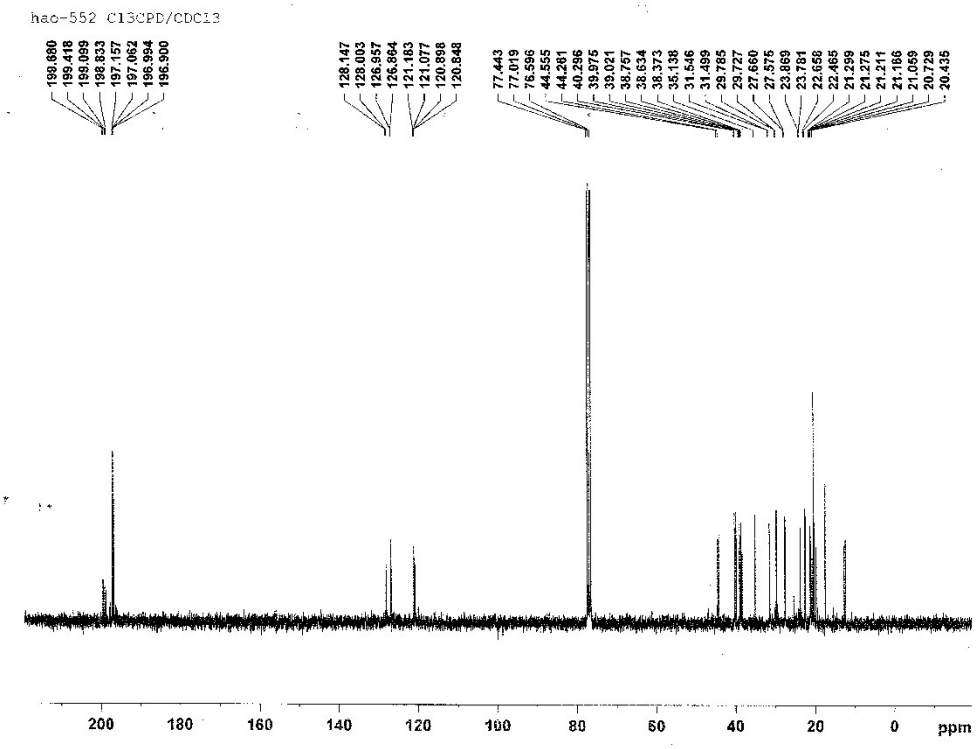
^{31}P CPD NMR ($CDCl_3$) of **8a,b**



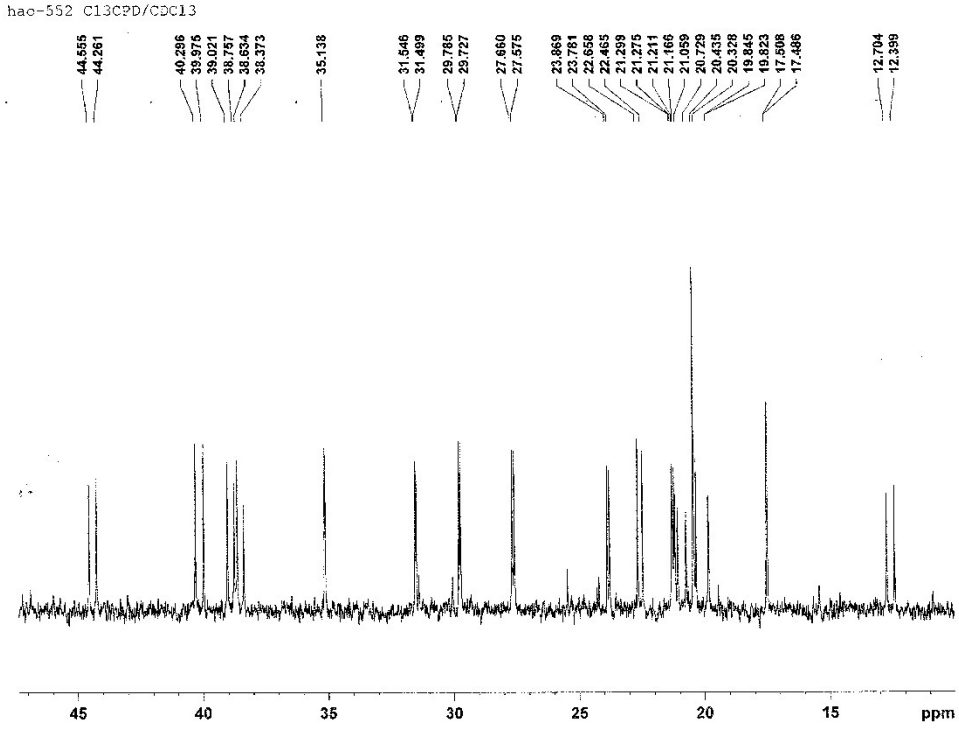
^{1}H NMR ($CDCl_3$) of **8a,b**



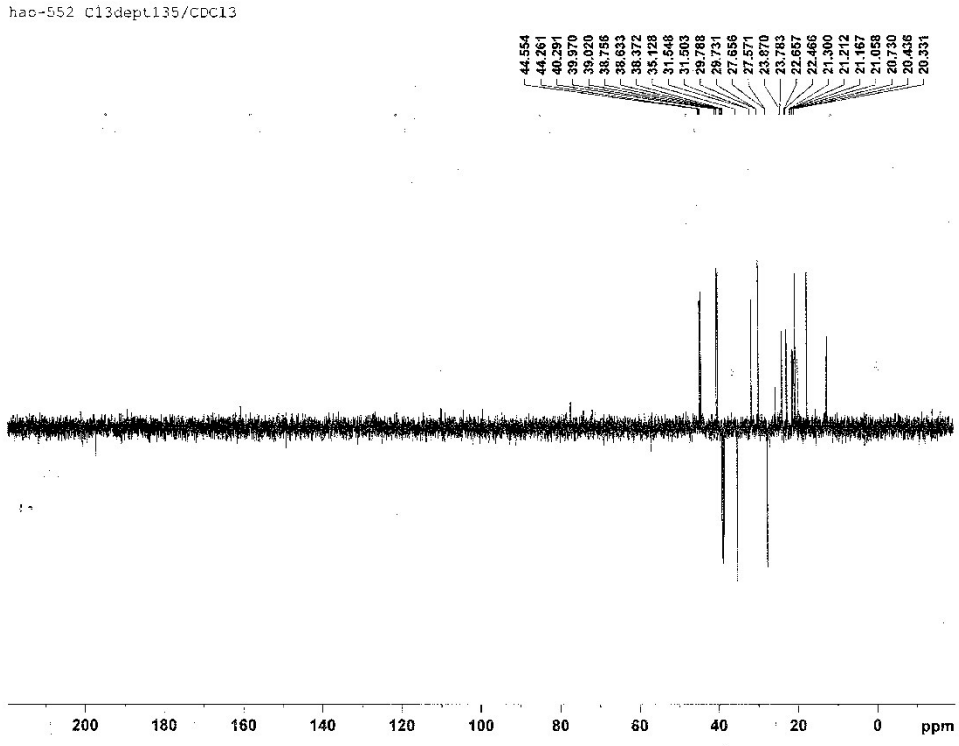
^{1}H NMR ($CDCl_3$) of **8a,b**



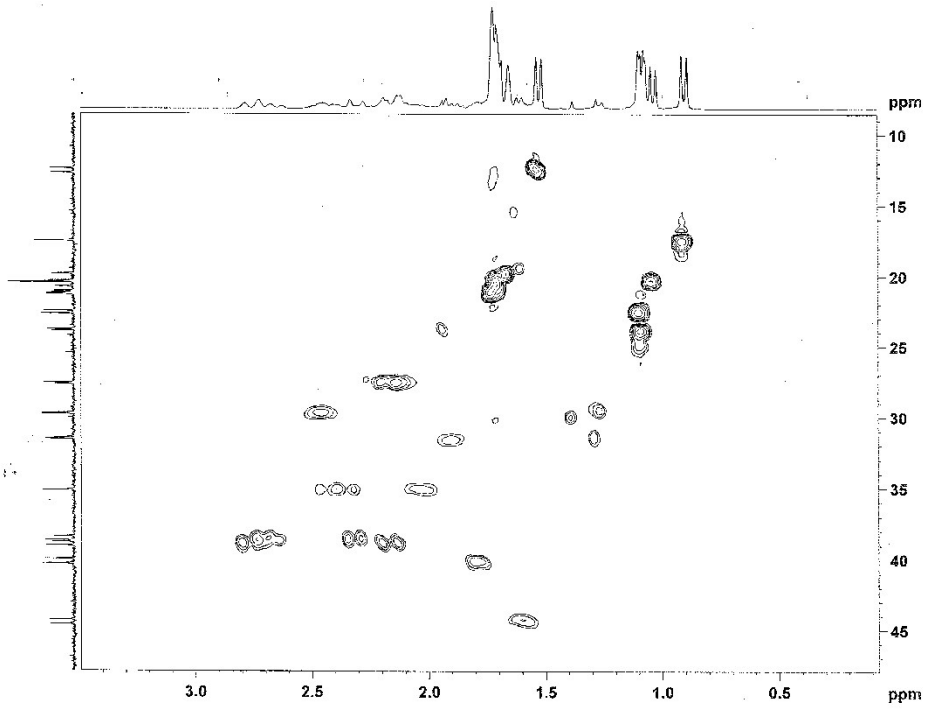
^{13}C NMR ($CDCl_3$) of **8a,b**



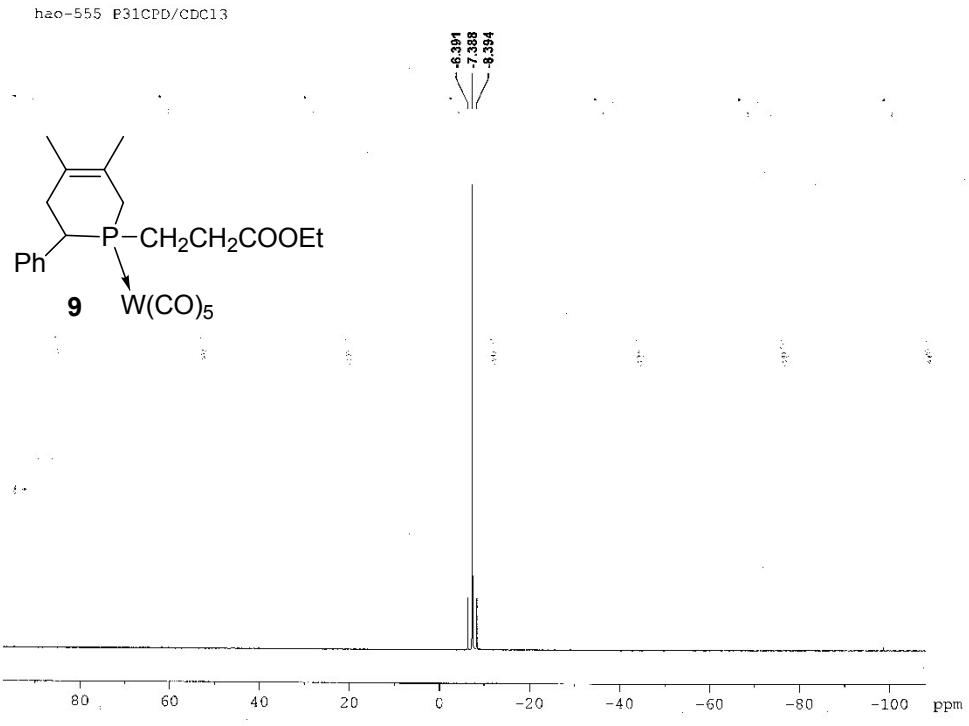
^{13}C NMR ($CDCl_3$) of **8a,b**



^{135}Dept NMR ($CDCl_3$) of **8a,b**

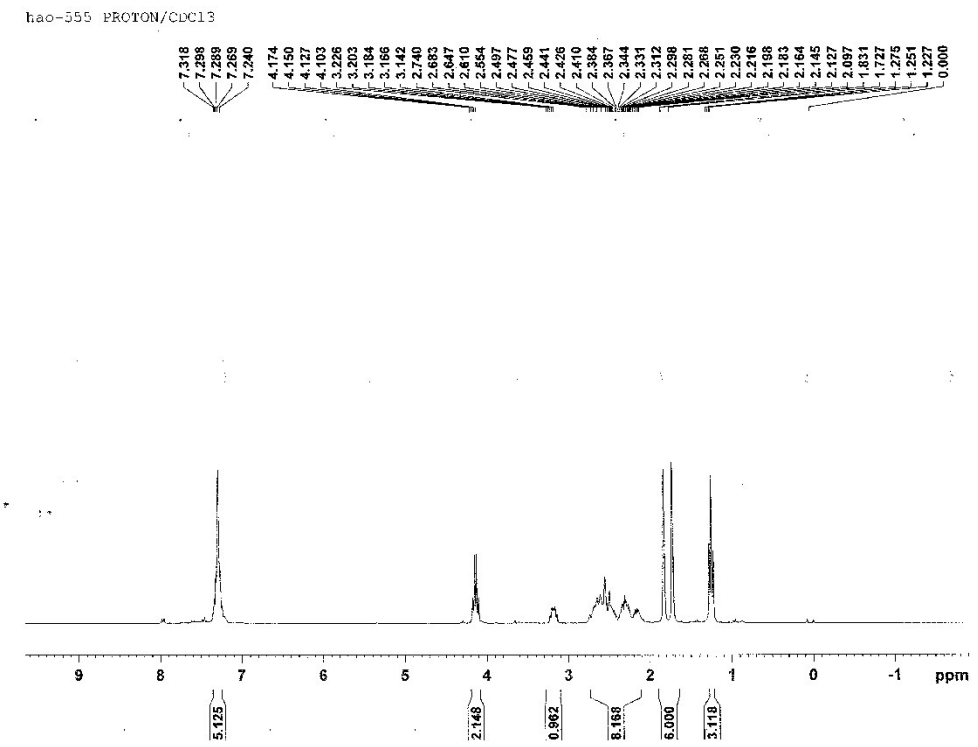


HSQC(C-H) NMR ($CDCl_3$) of **8a,b**

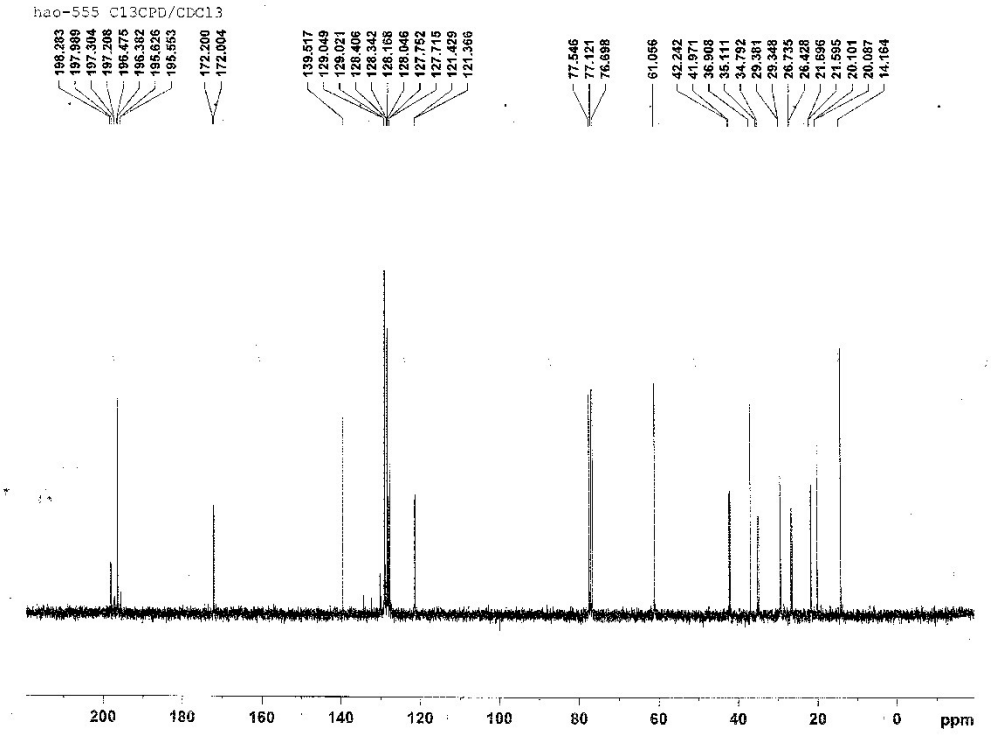


9

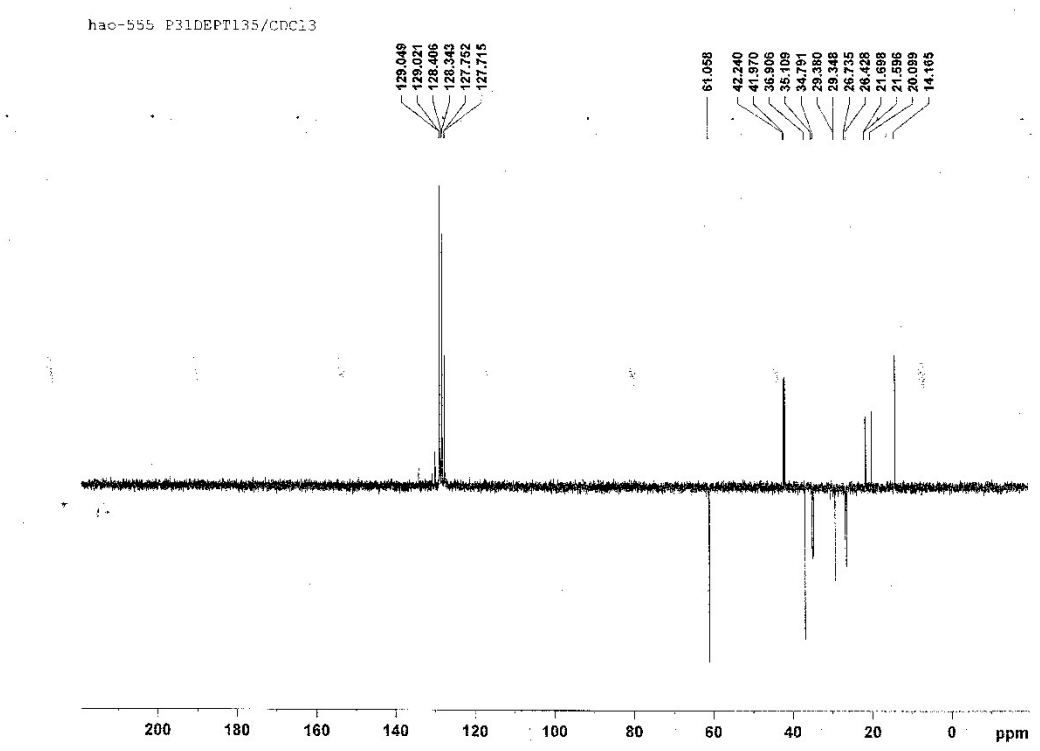
^{31}P CPD NMR ($CDCl_3$) of **9**



^{1}H NMR ($CDCl_3$) of **9**



^{13}C NMR ($CDCl_3$) of **9**



^{135}Dept NMR ($CDCl_3$) of **9**