

Supporting Information

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Eco-friendly synthesis, antimicrobial activity, molecular docking, ADMET studies of novel α -aminophosphonates

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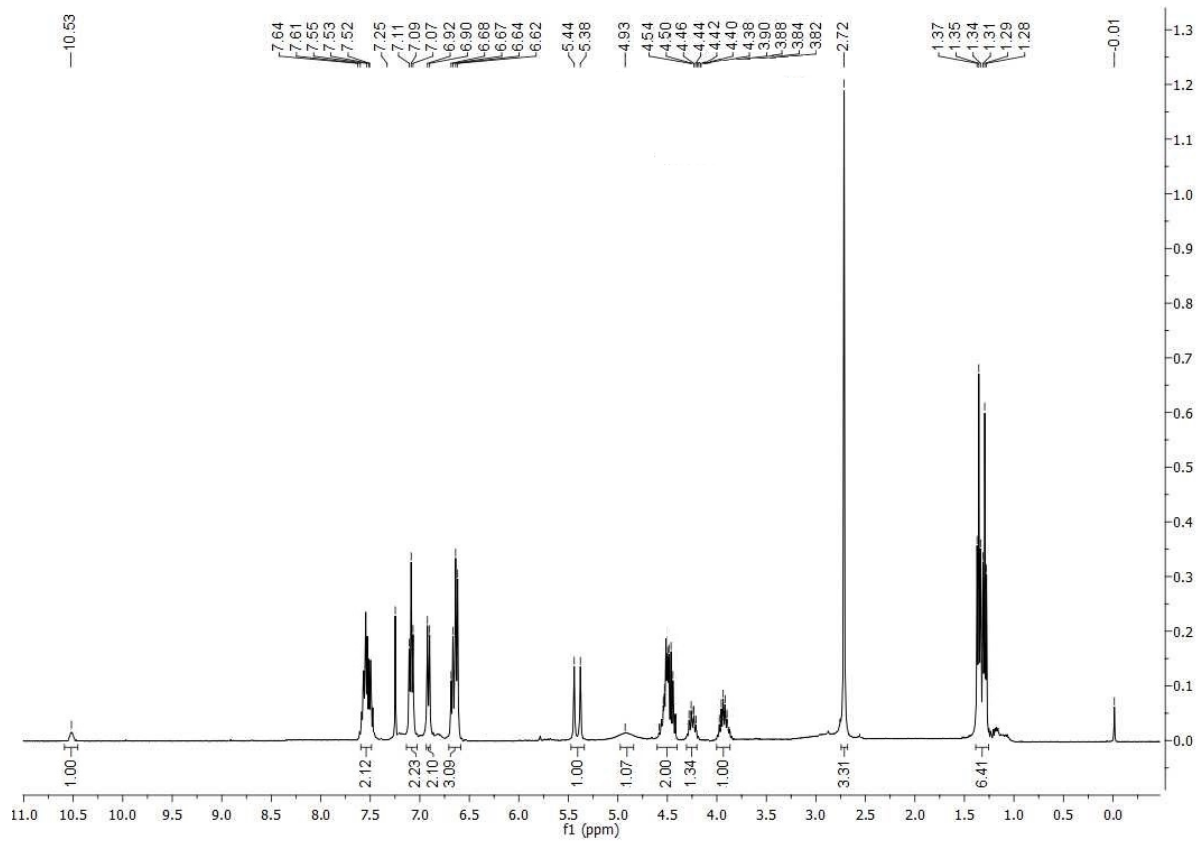


Figure S1: $^1\text{H-NMR}$ (400 MHz, CDCl_3) Spectrum of **4a**

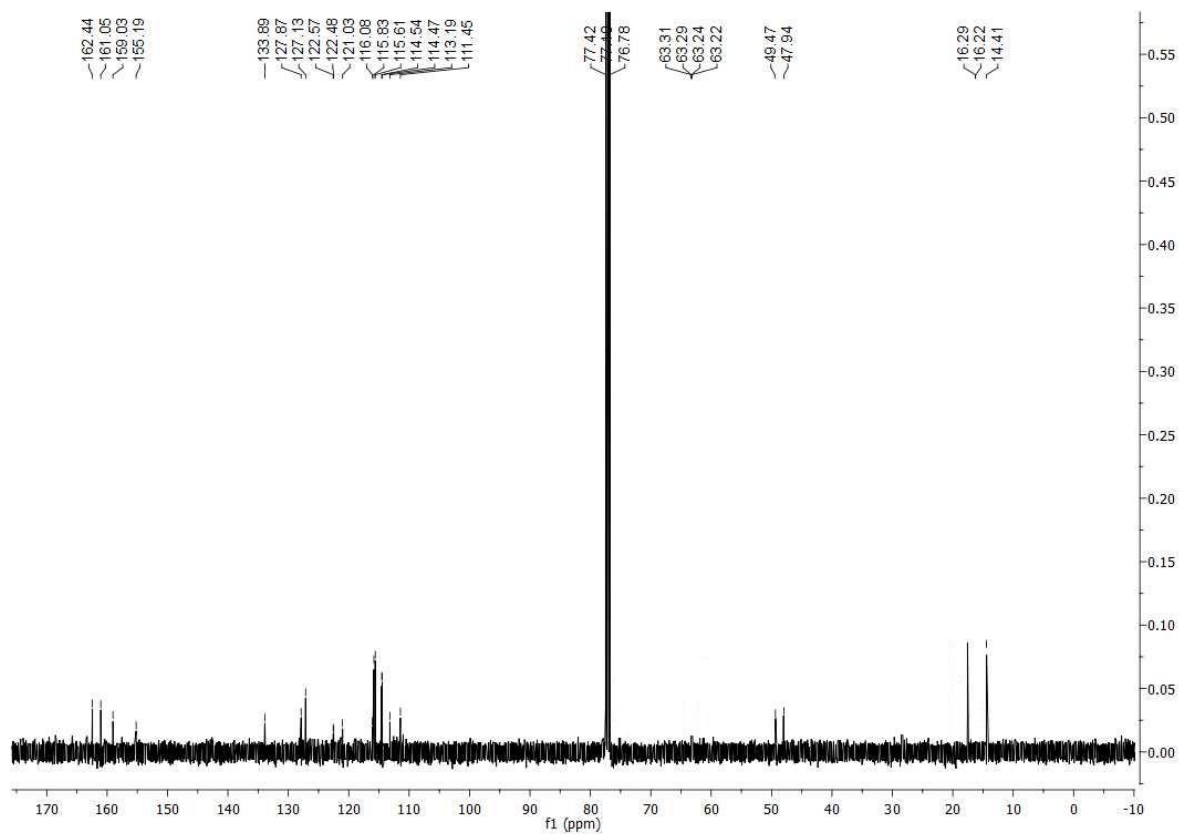


Figure S2: ^{13}C -NMR (100 MHz, CDCl_3) Spectrum of **4a**

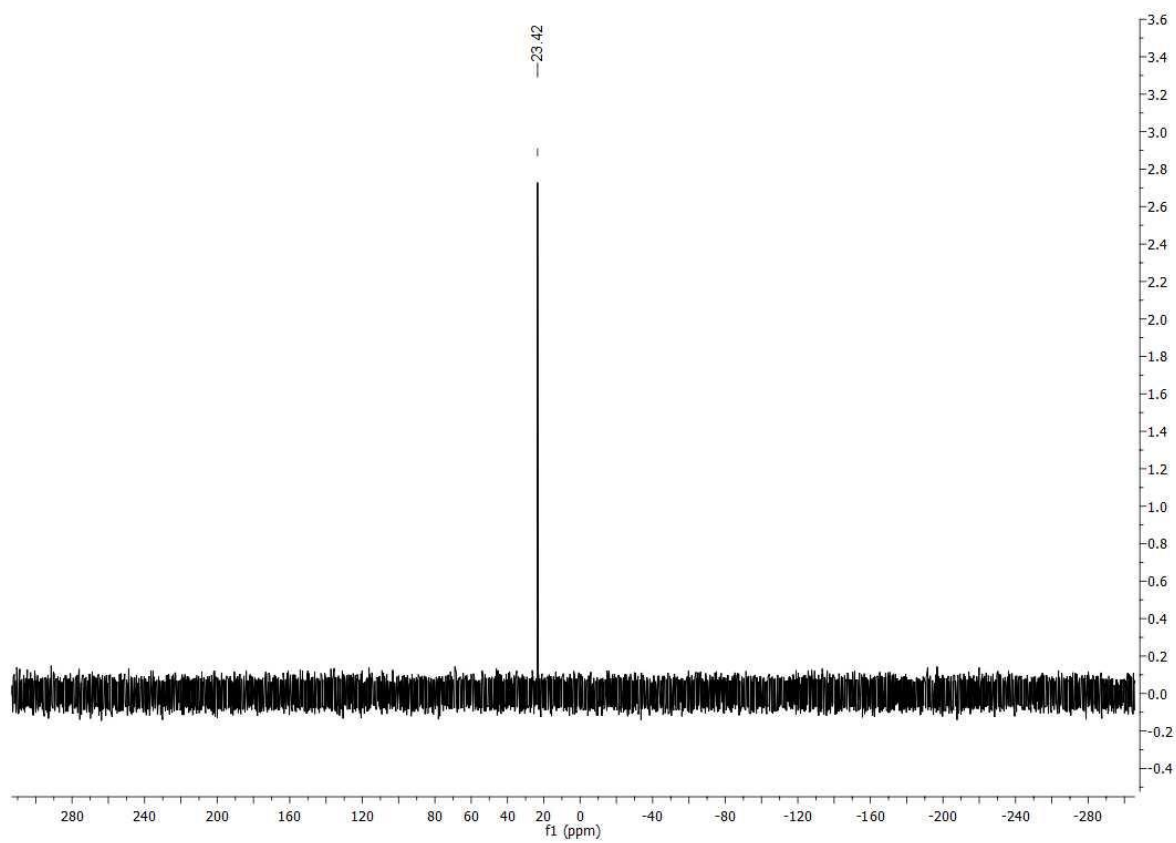


Figure S3: ^{31}P -NMR (161.9 MHz, CDCl_3) Spectrum of **4a**

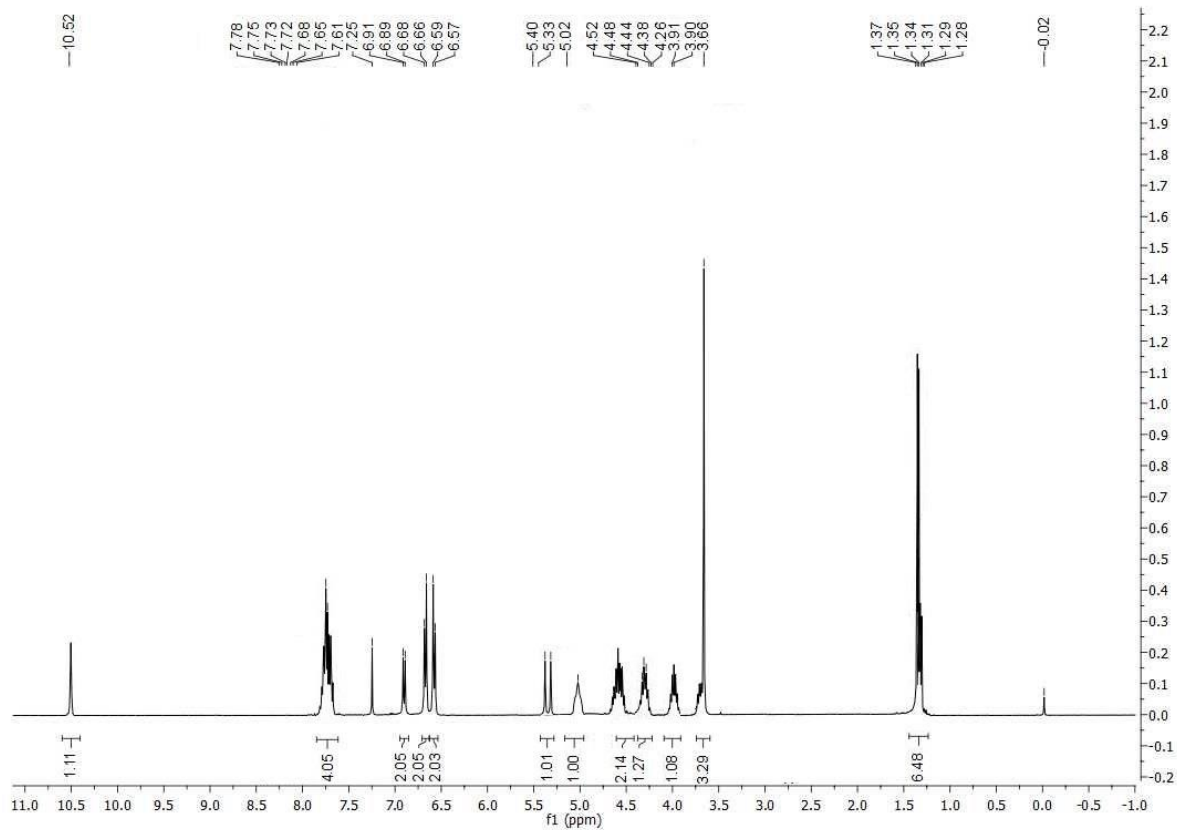


Figure S4: $^1\text{H-NMR}$ (400 MHz, CDCl_3) Spectrum of **4b**

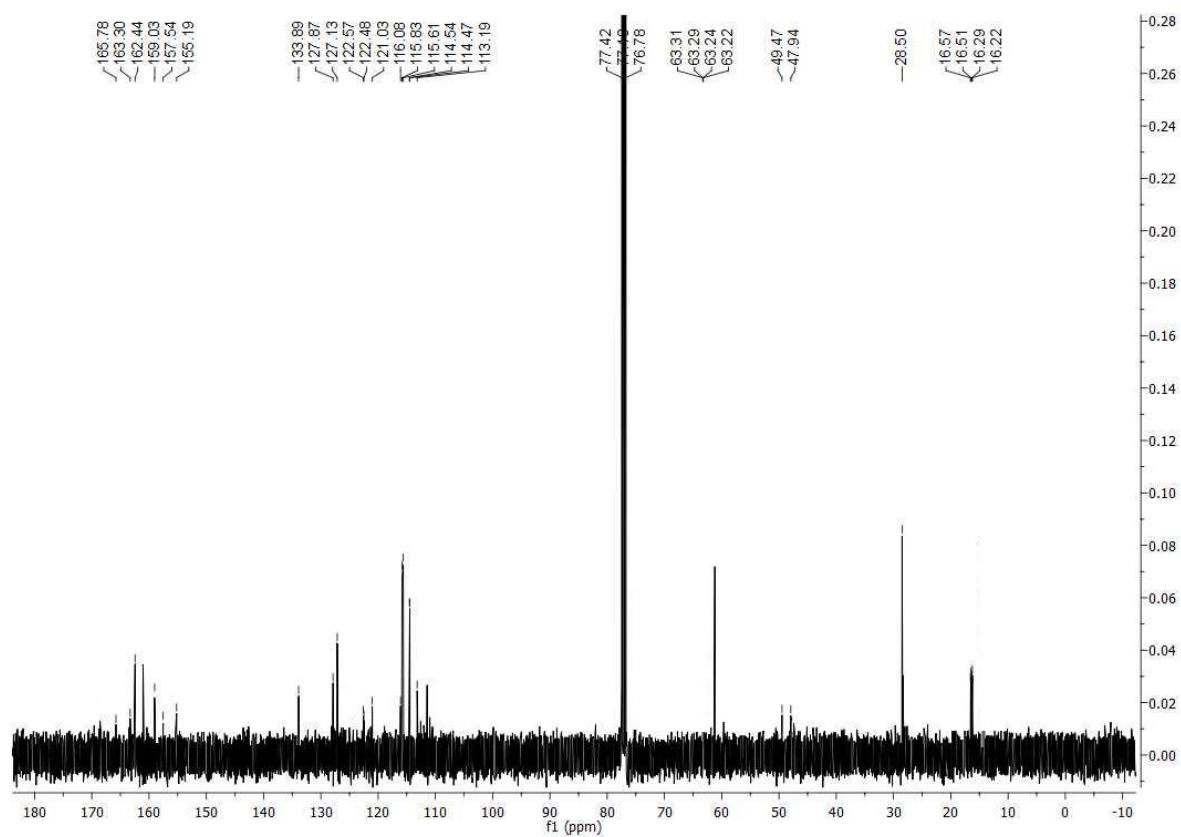


Figure S5: ^{13}C -NMR (100 MHz, CDCl_3) Spectrum of **4b**

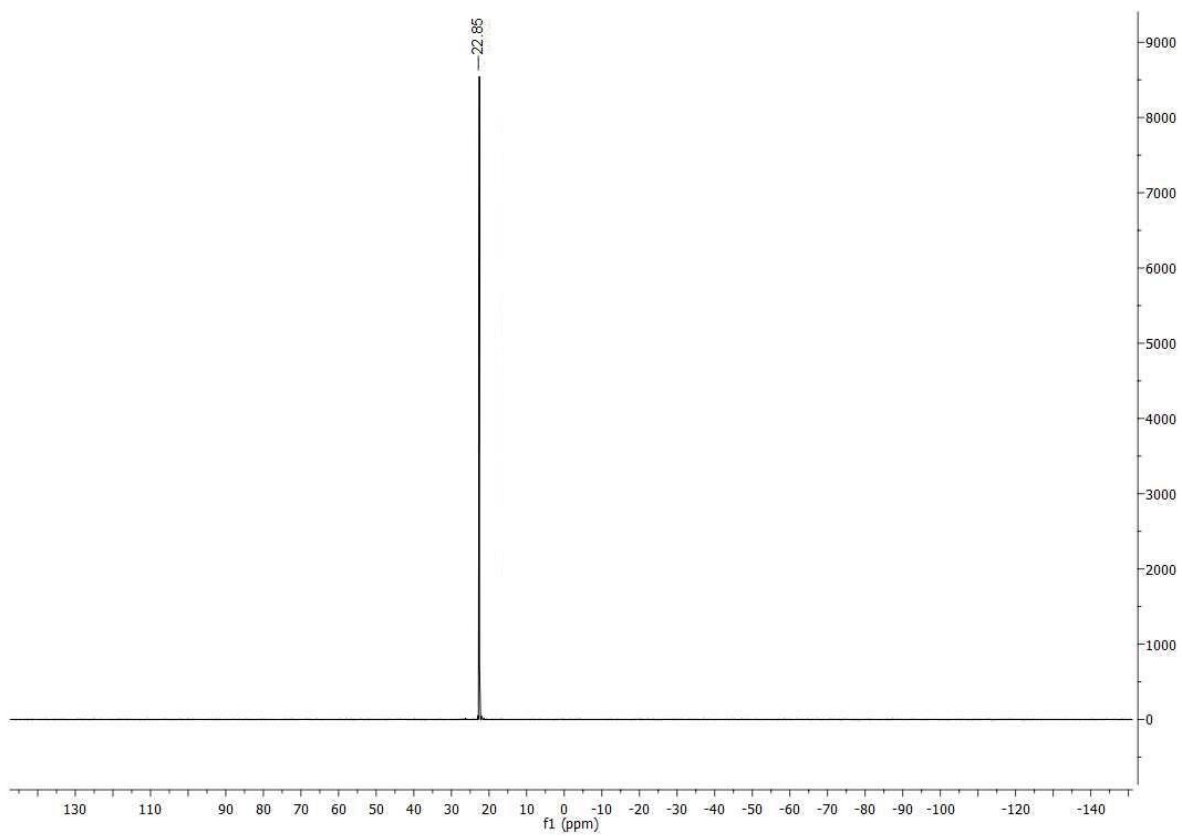


Figure S6: ^{31}P -NMR (161.9 MHz, CDCl_3) Spectrum of **4b**

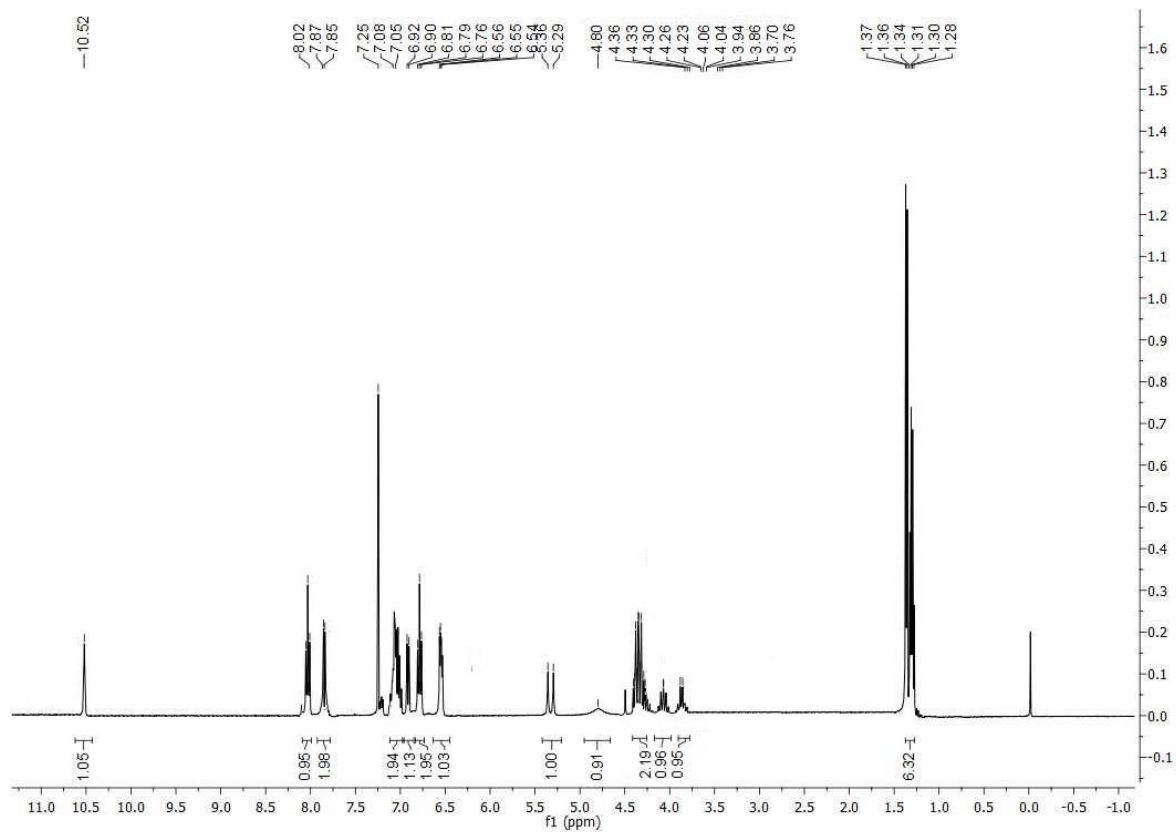


Figure S7: $^1\text{H-NMR}$ (400 MHz, CDCl_3) Spectrum of **4c**

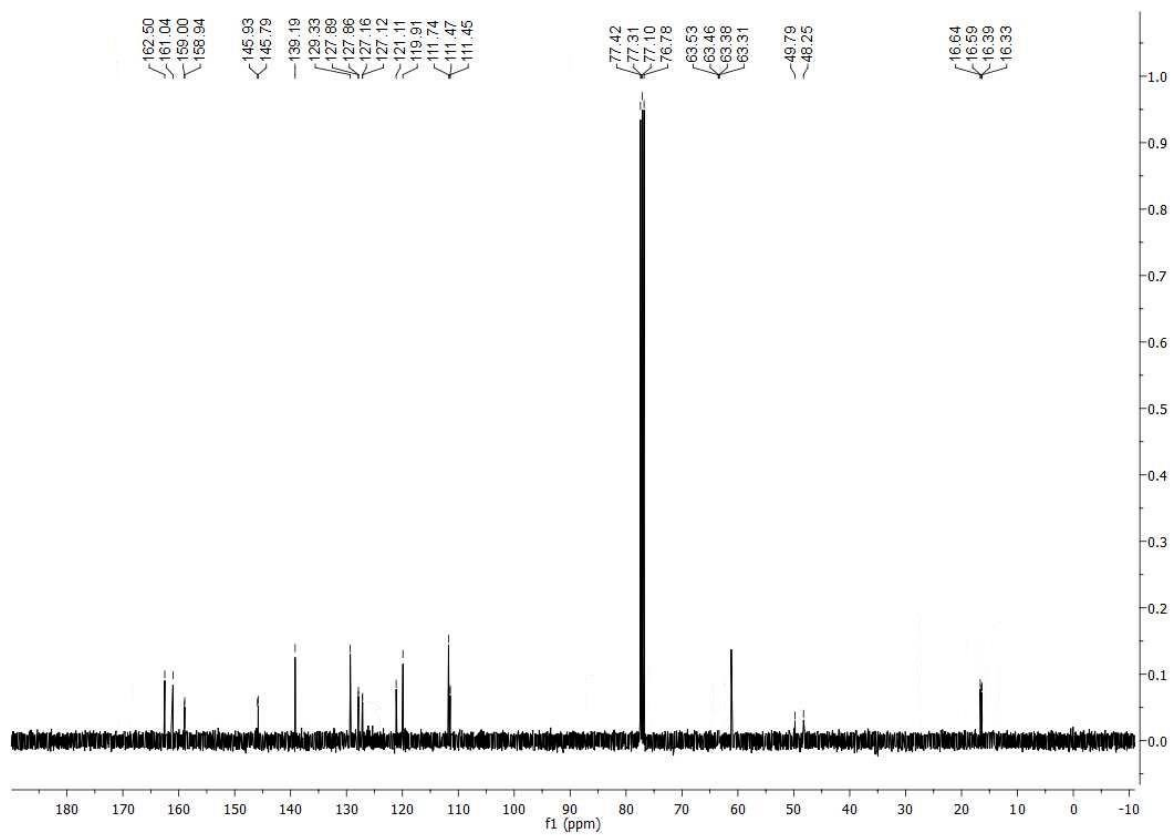


Figure S8: ^{13}C -NMR (100 MHz, CDCl_3) Spectrum of **4c**

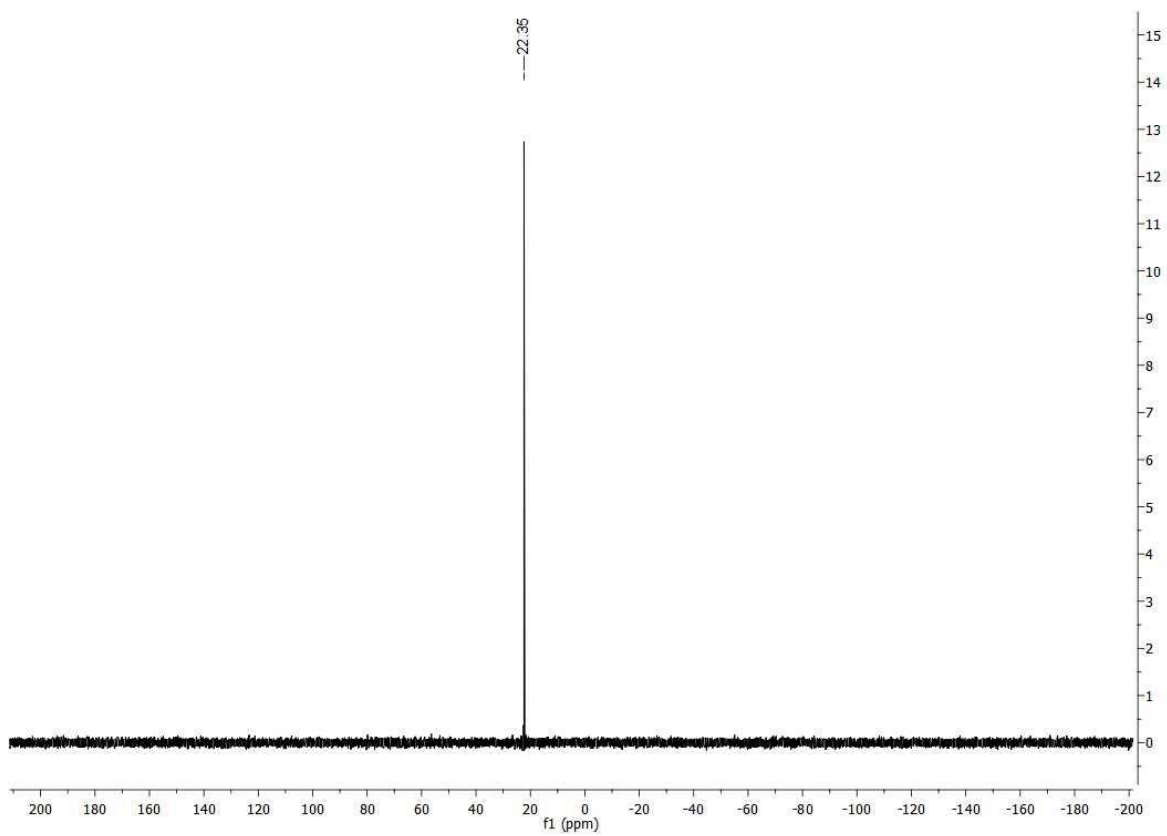


Figure S9: ^{31}P -NMR (161.9 MHz, CDCl_3) Spectrum of **4c**

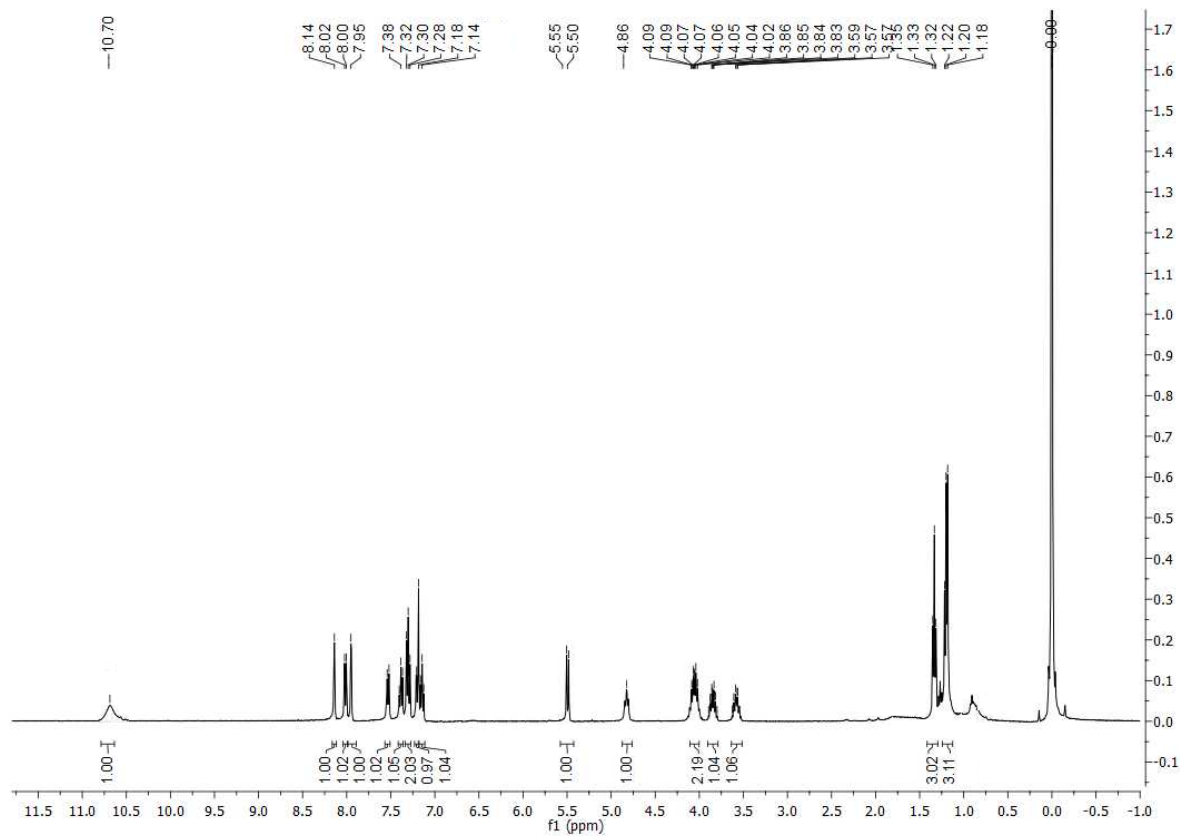


Figure S10: $^1\text{H-NMR}$ (400 MHz, CDCl_3) Spectrum of **4d**

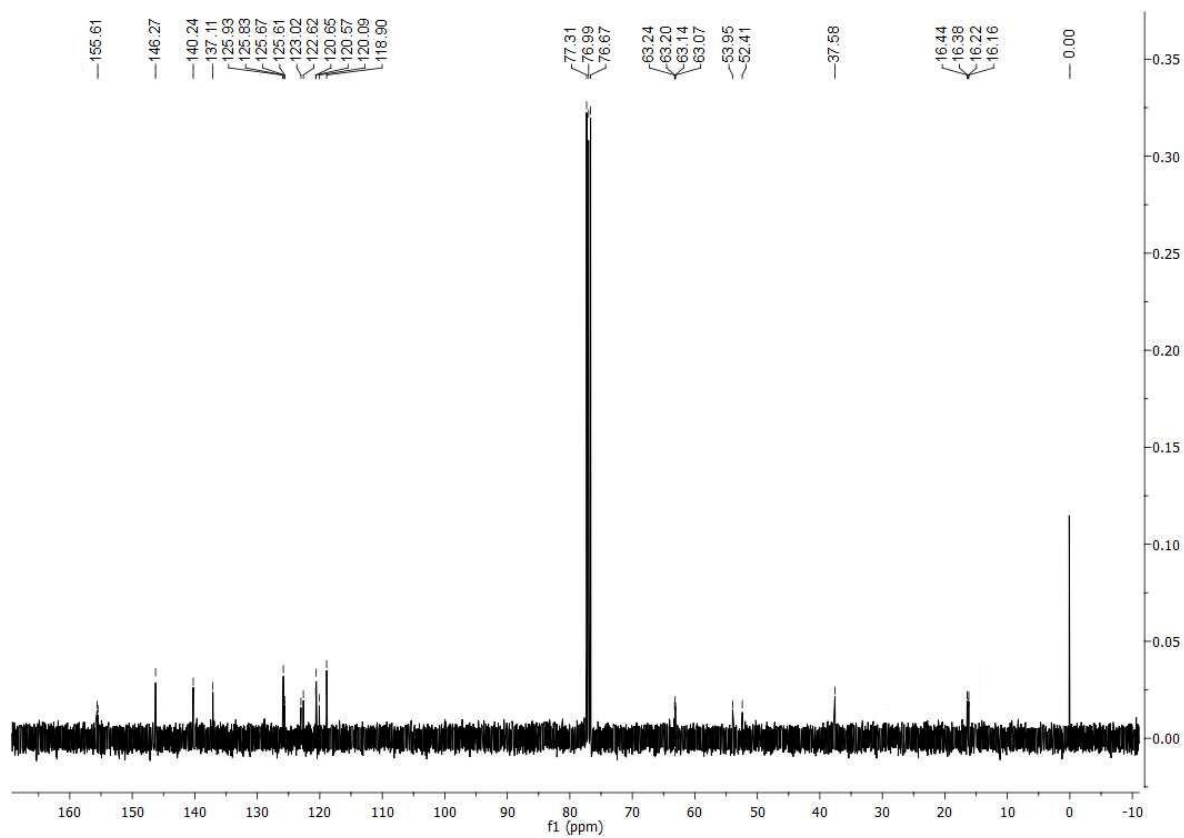


Figure S11: ^{13}C -NMR (100 MHz, CDCl_3) Spectrum of **4d**

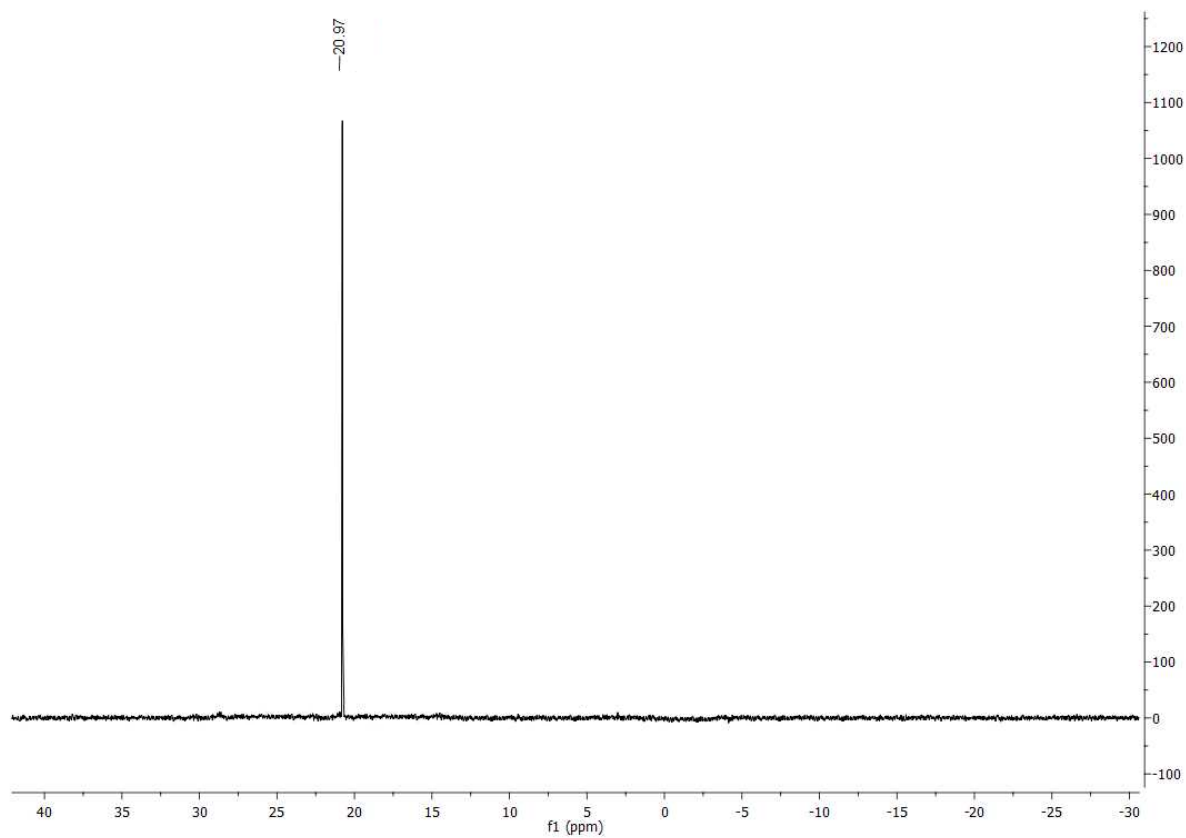


Figure S12: ^{31}P -NMR (161.9 MHz, CDCl_3) Spectrum of **4d**

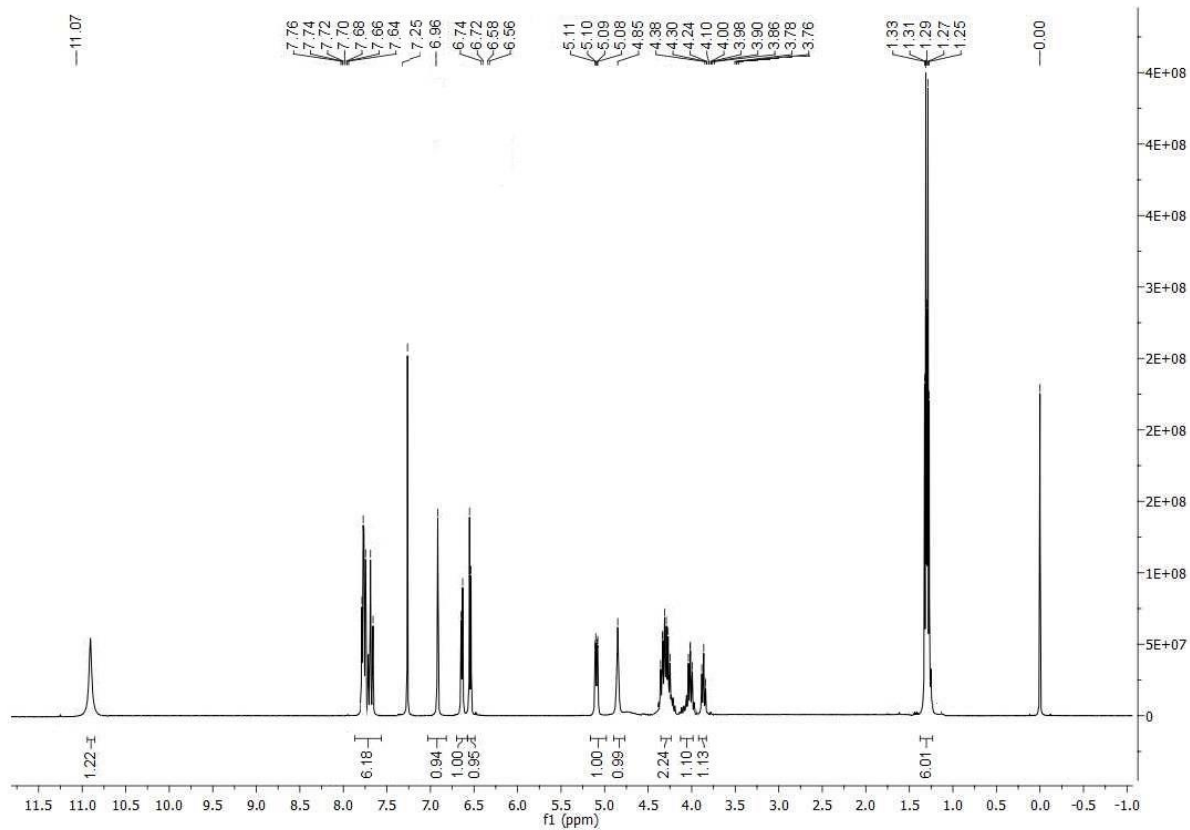


Figure S13: $^1\text{H-NMR}$ (400 MHz, CDCl_3) Spectrum of **4e**

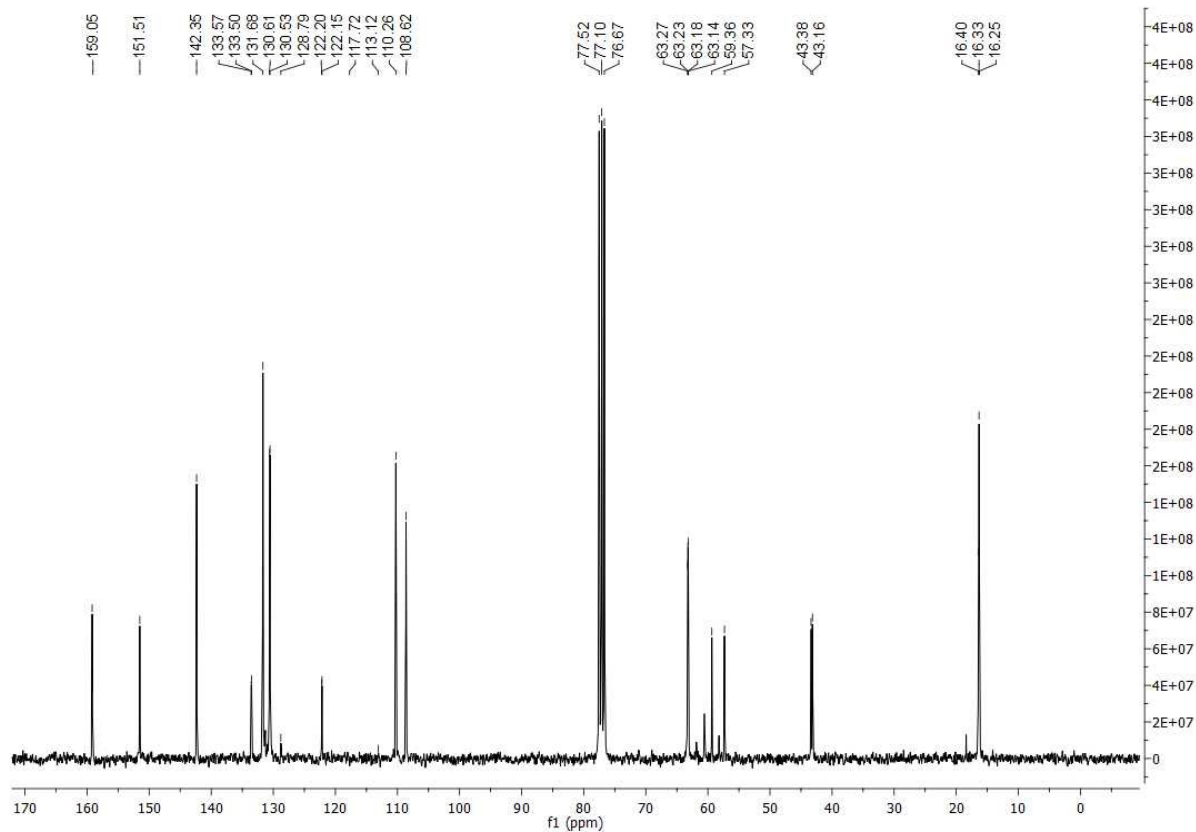


Figure S14: ^{13}C -NMR (100 MHz, CDCl_3) Spectrum of **4e**

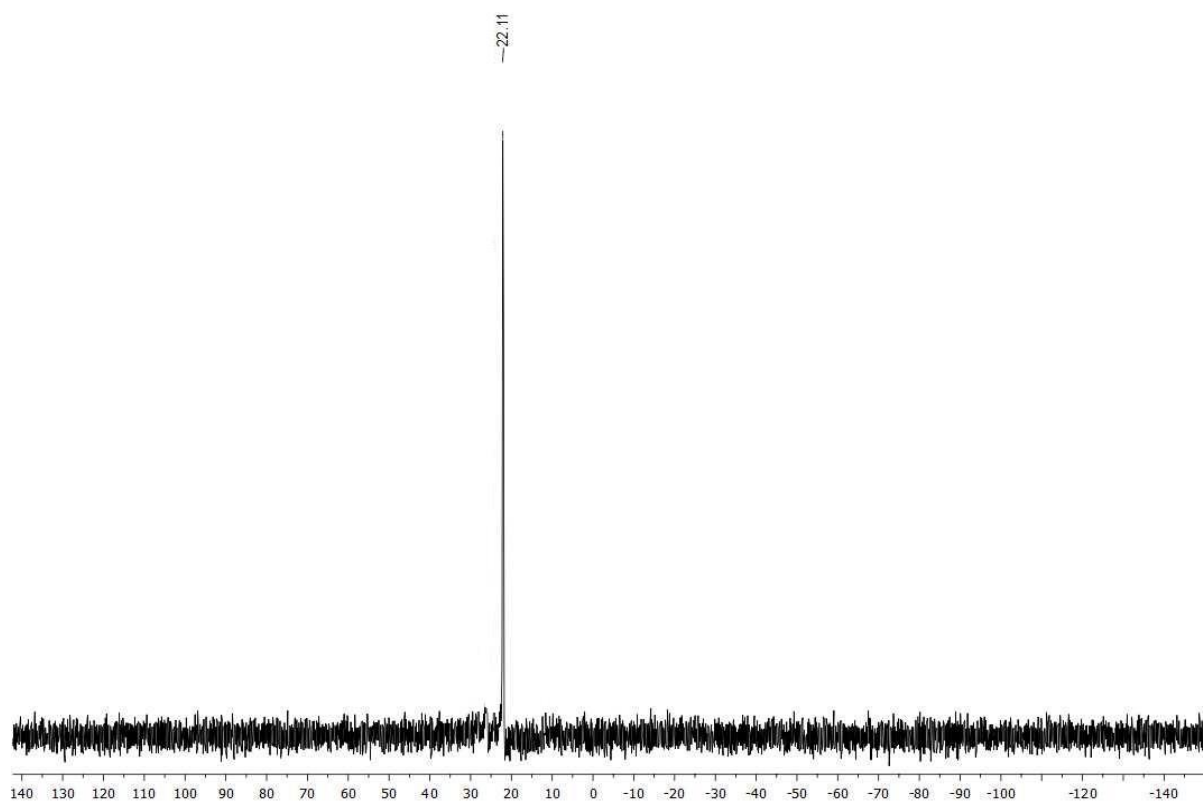


Figure S15: ^{31}P -NMR (161.9 MHz, CDCl_3) Spectrum of **4e**

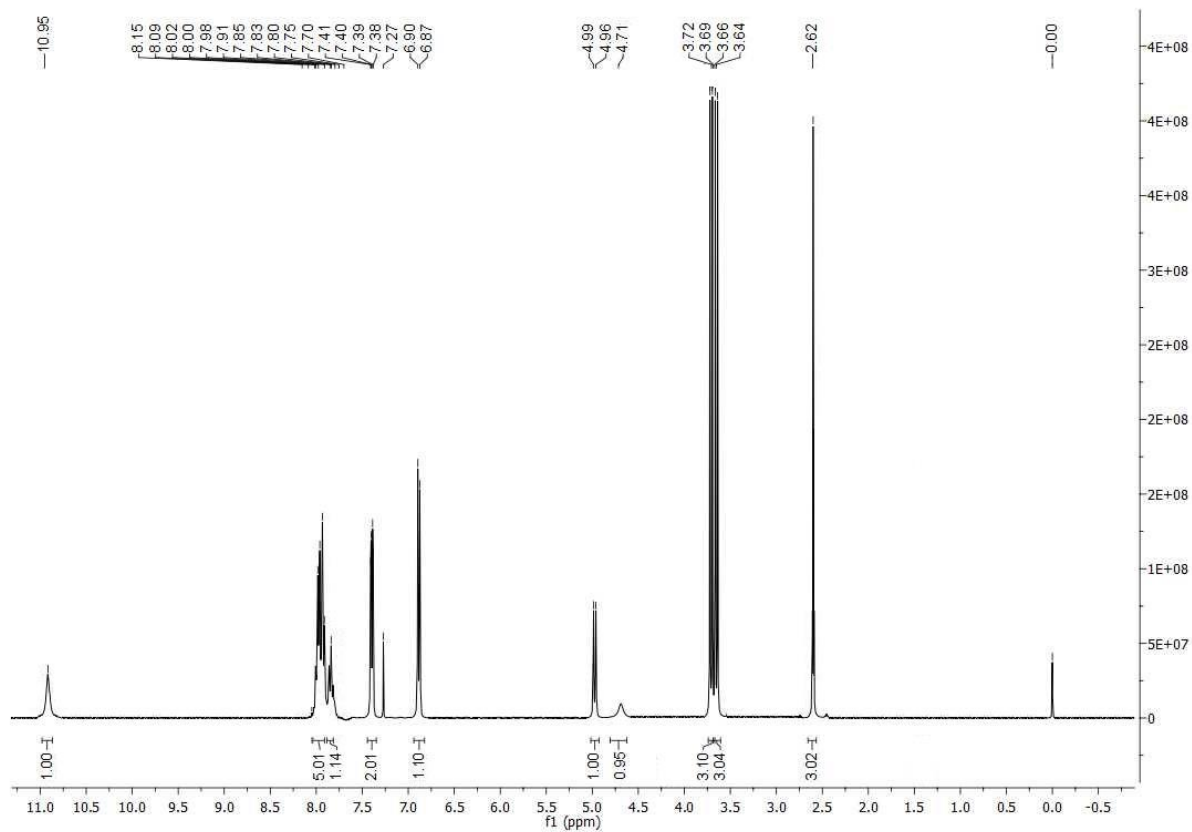


Figure S16: $^1\text{H-NMR}$ (400 MHz, CDCl_3) Spectrum of **4f**

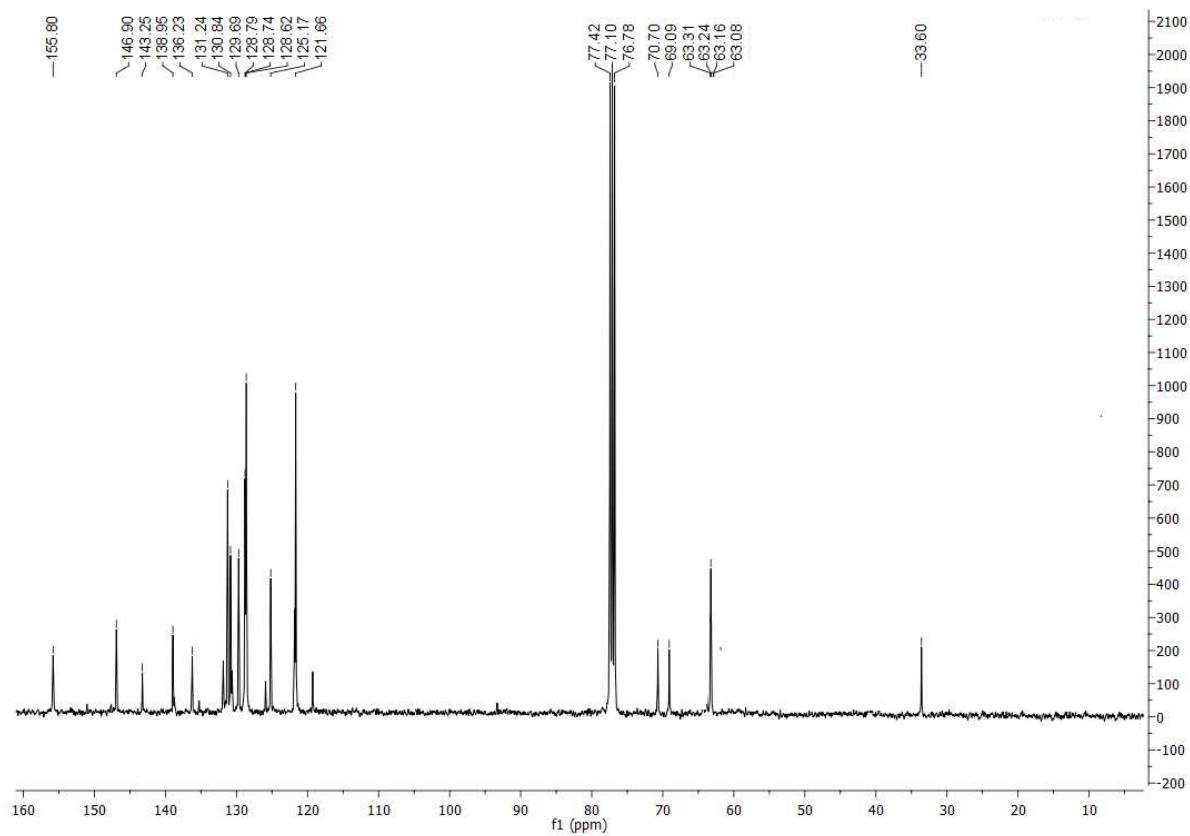


Figure S17: ^{13}C -NMR (100 MHz, CDCl_3) Spectrum of **4f**

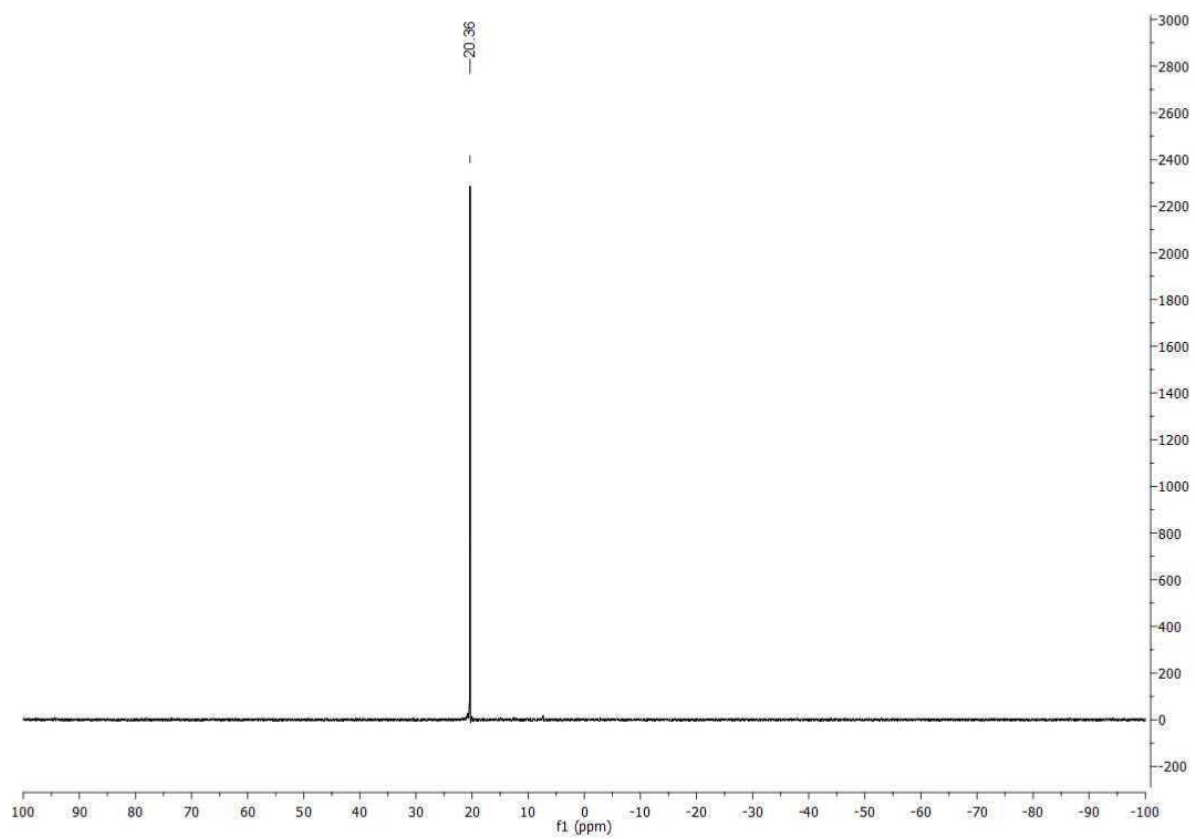


Figure S18: ^{31}P -NMR (161.9 MHz, CDCl_3) Spectrum of **4f**

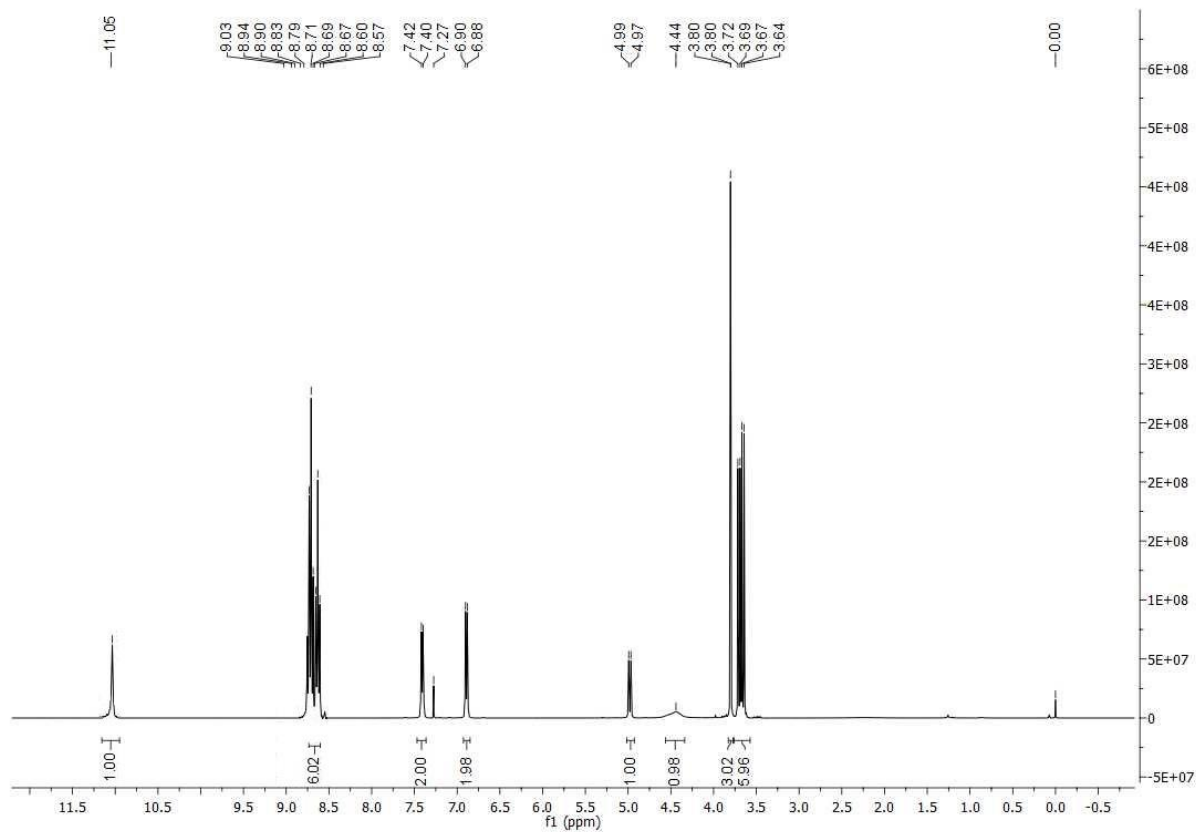


Figure S19: $^1\text{H-NMR}$ (400 MHz, CDCl_3) Spectrum of **4g**

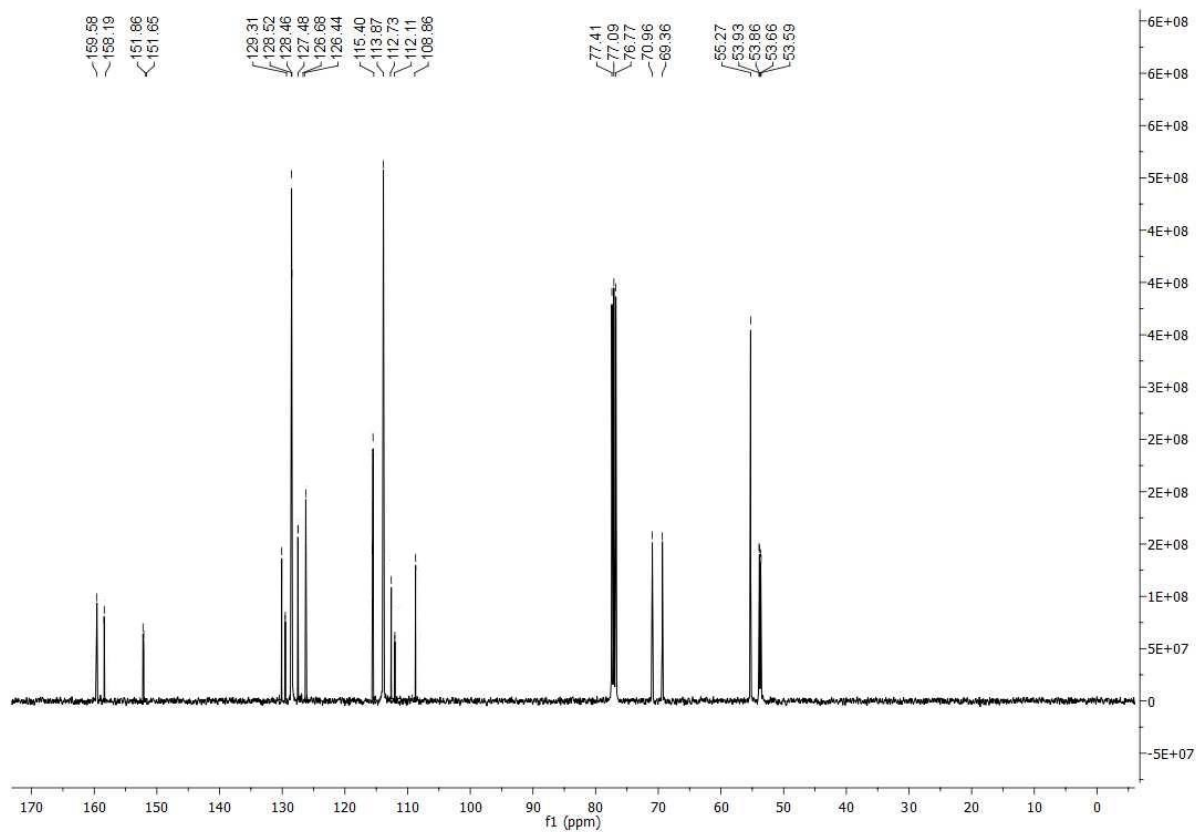


Figure S20: ^{13}C -NMR (100 MHz, CDCl_3) Spectrum of **4g**

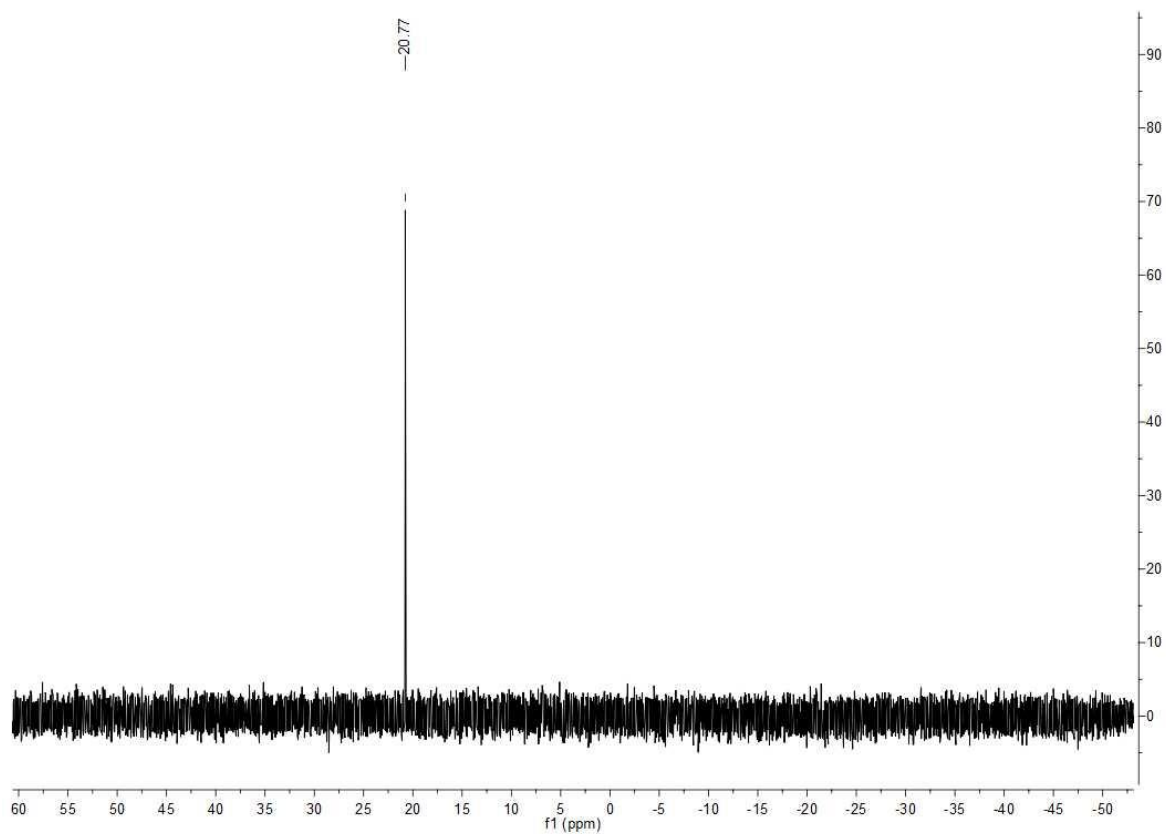


Figure S21: ^{31}P -NMR (161.9 MHz, CDCl_3) Spectrum of **4g**

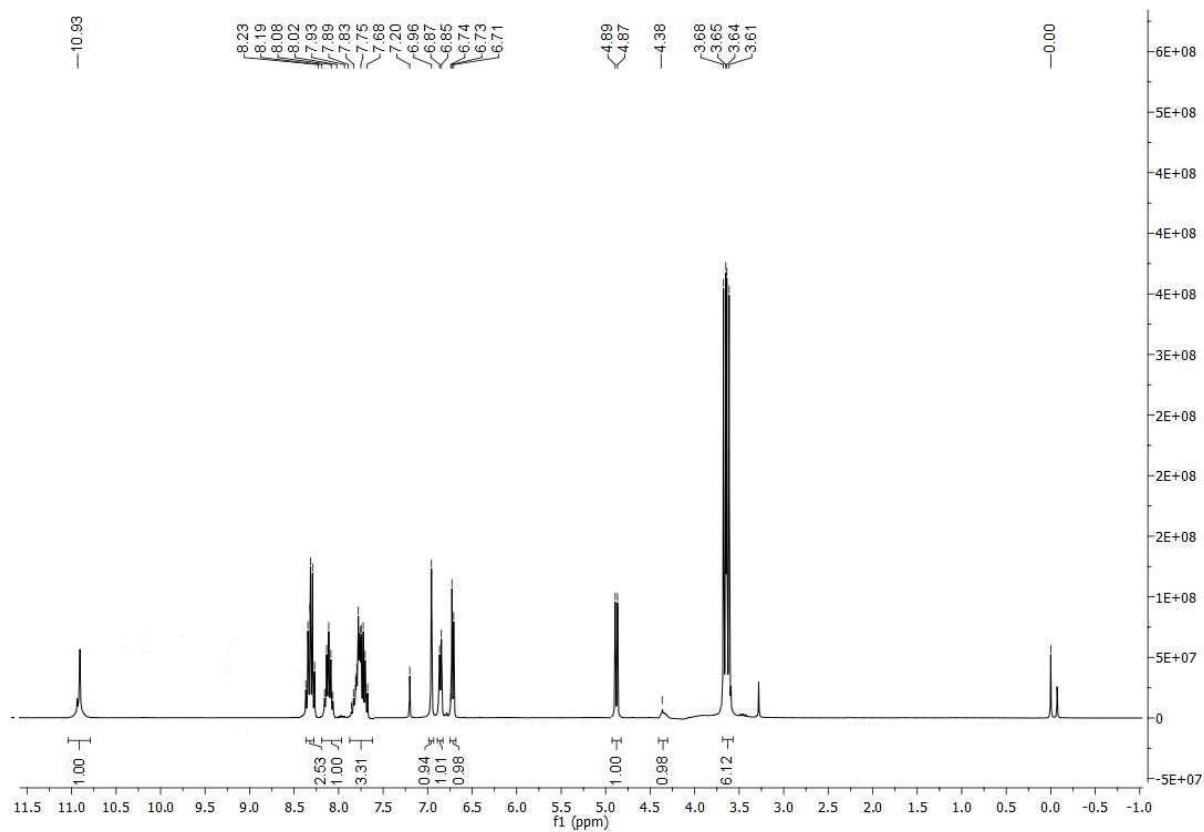


Figure S22: $^1\text{H-NMR}$ (400 MHz, CDCl_3) Spectrum of **4h**

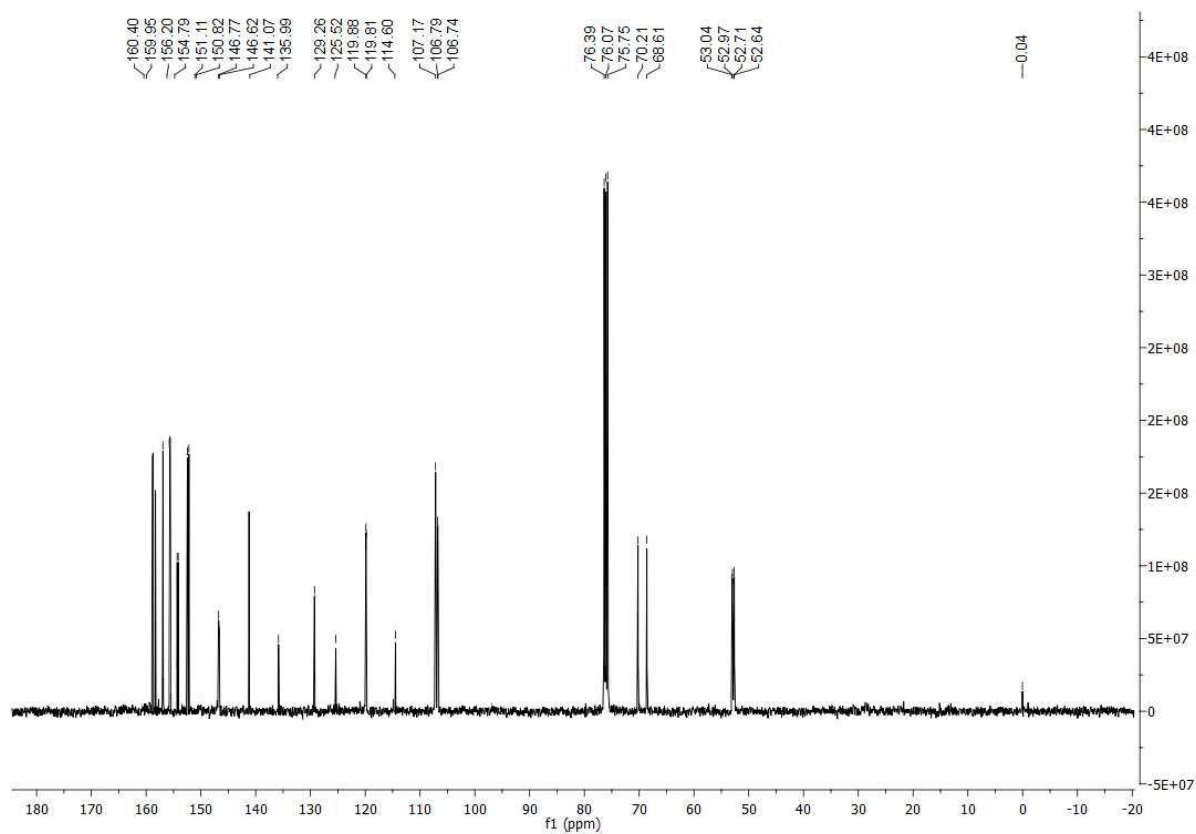


Figure S23: ^{13}C -NMR (100 MHz, CDCl_3) Spectrum of **4h**

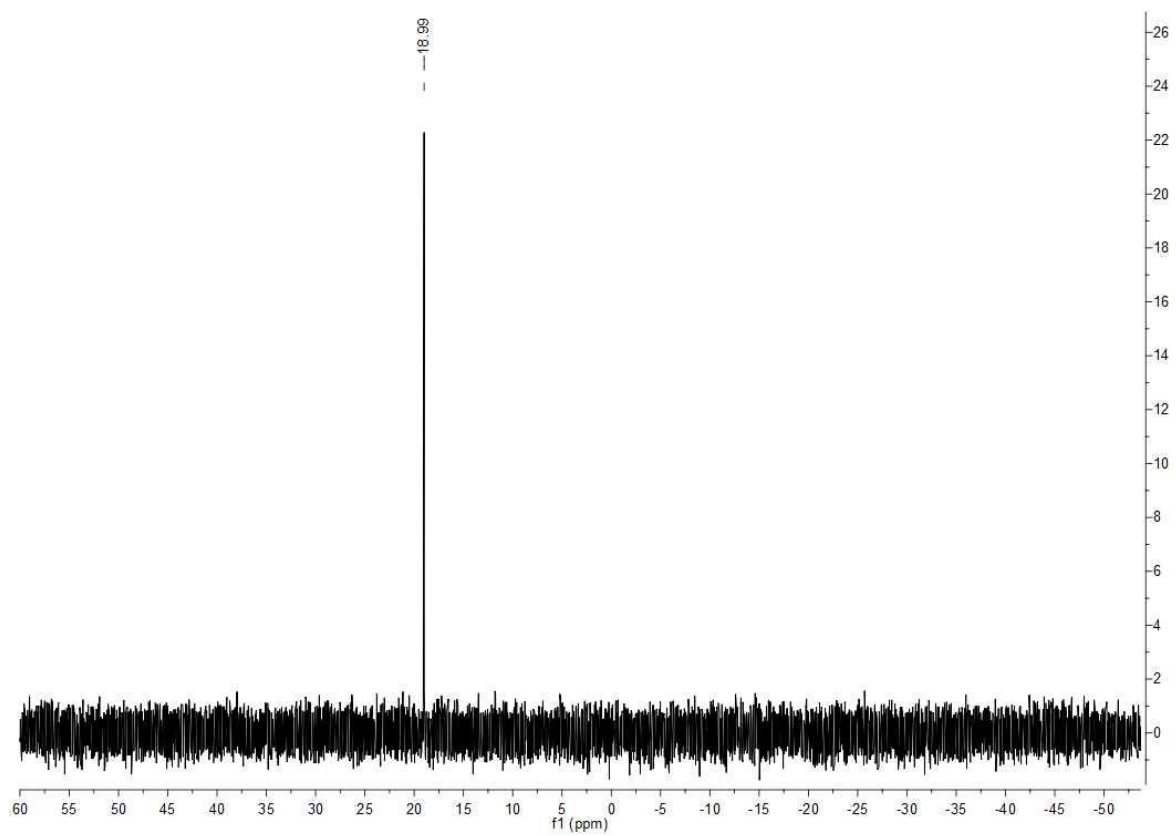


Figure S24: ^{31}P -NMR (161.9 MHz, CDCl_3) Spectrum of **4h**

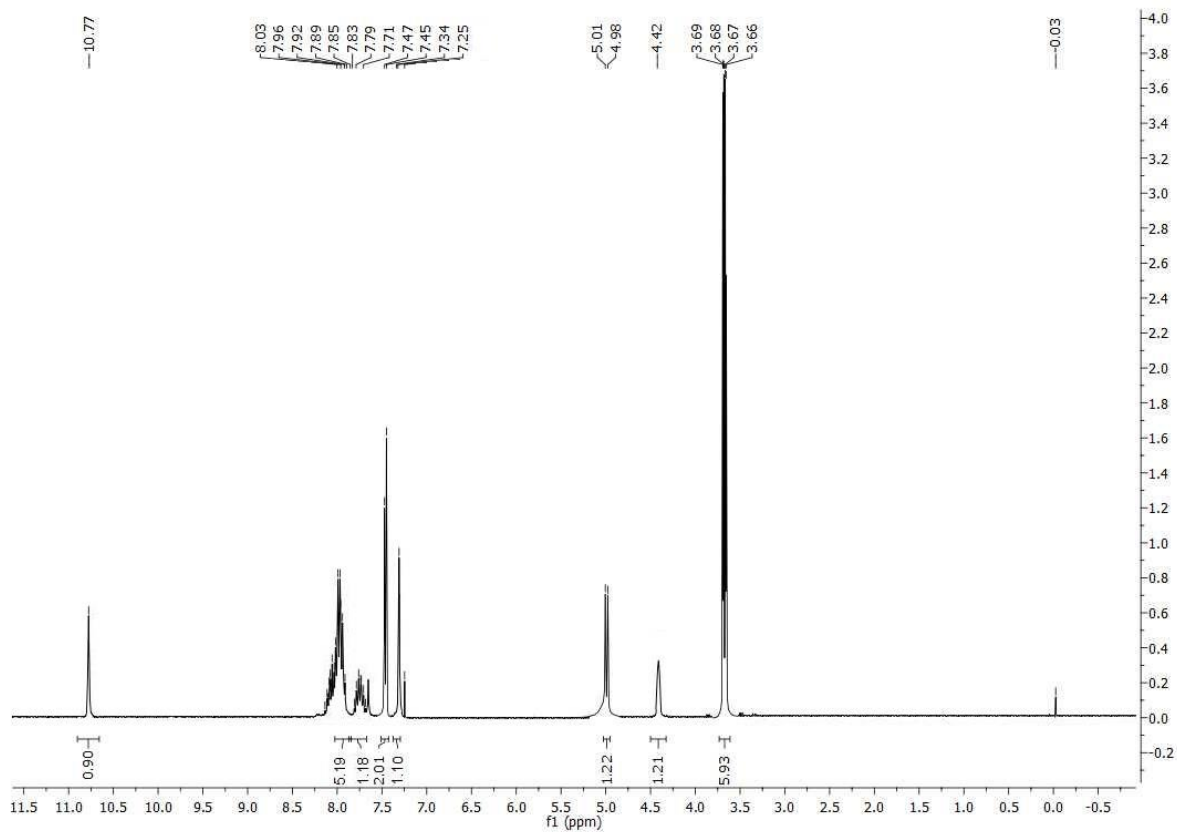


Figure S25: $^1\text{H-NMR}$ (400 MHz, CDCl_3) Spectrum of **4i**

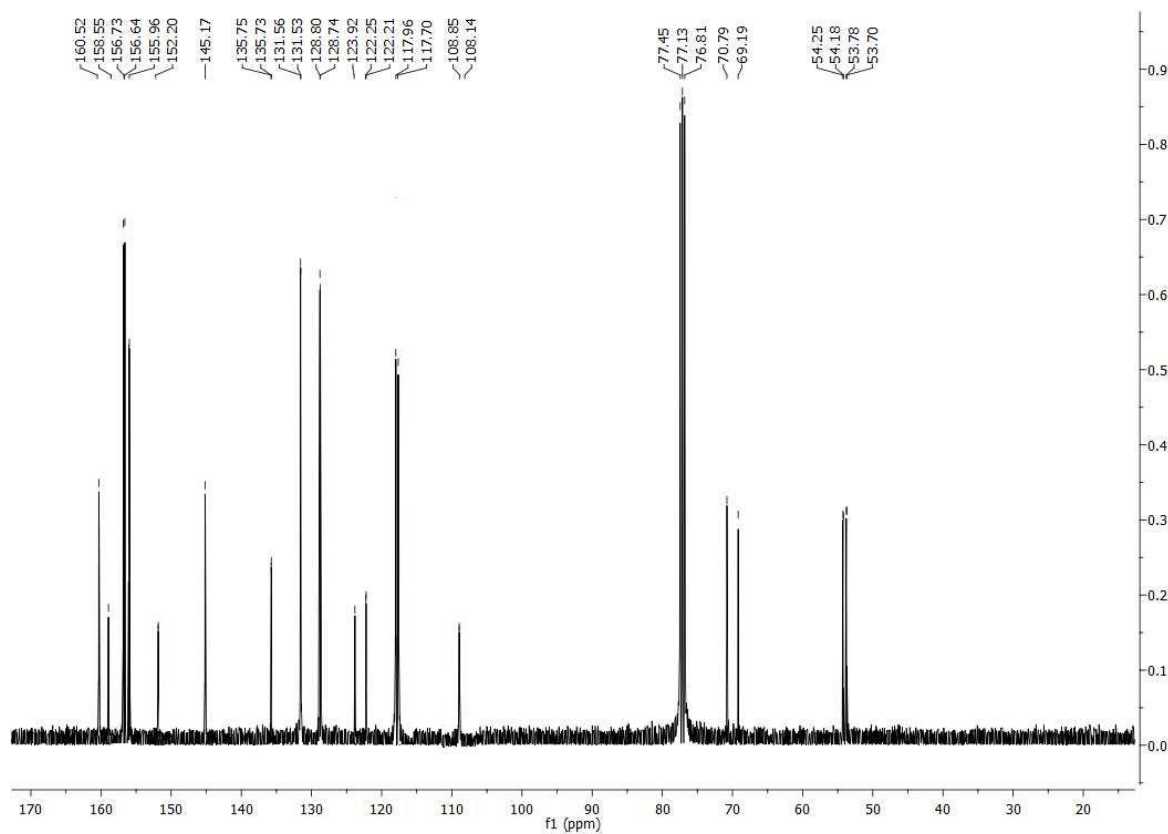


Figure S26: ^{13}C -NMR (100 MHz, CDCl_3) Spectrum of **4i**

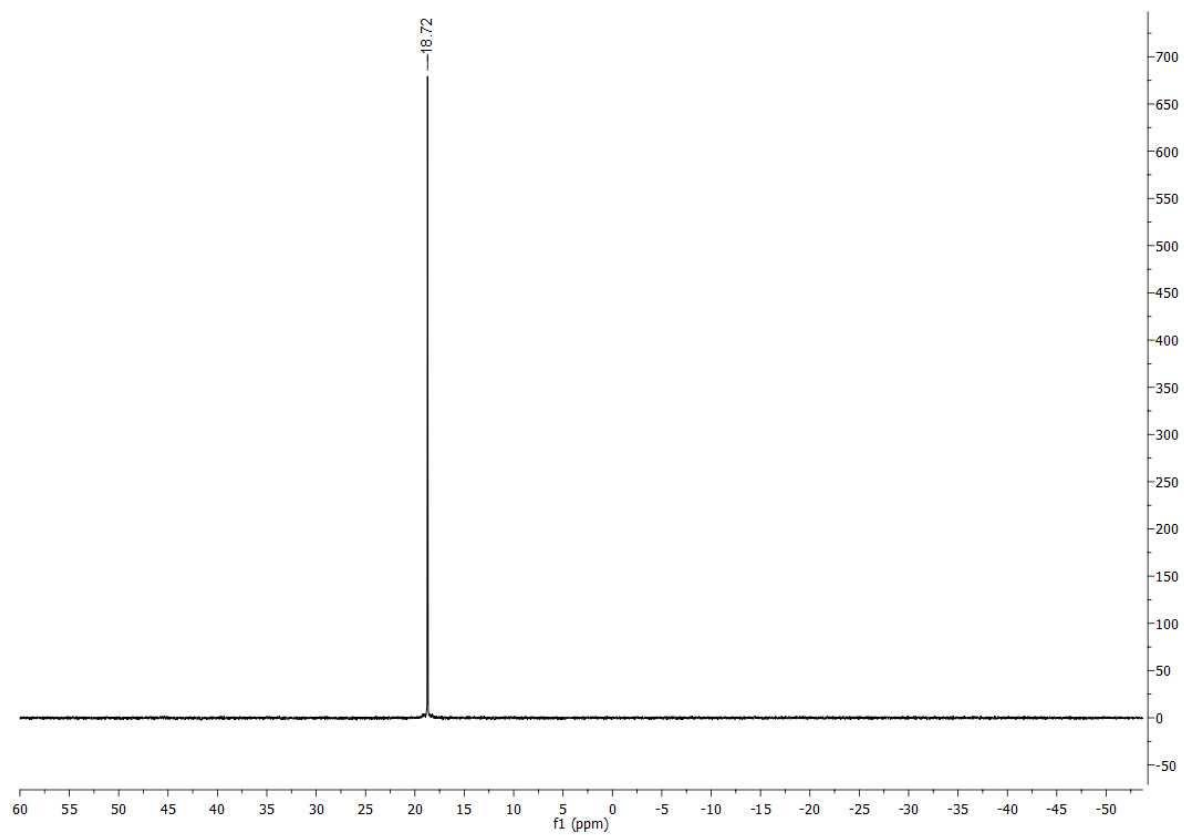


Figure S27: ^{31}P -NMR (161.9 MHz, CDCl_3) Spectrum of **4i**

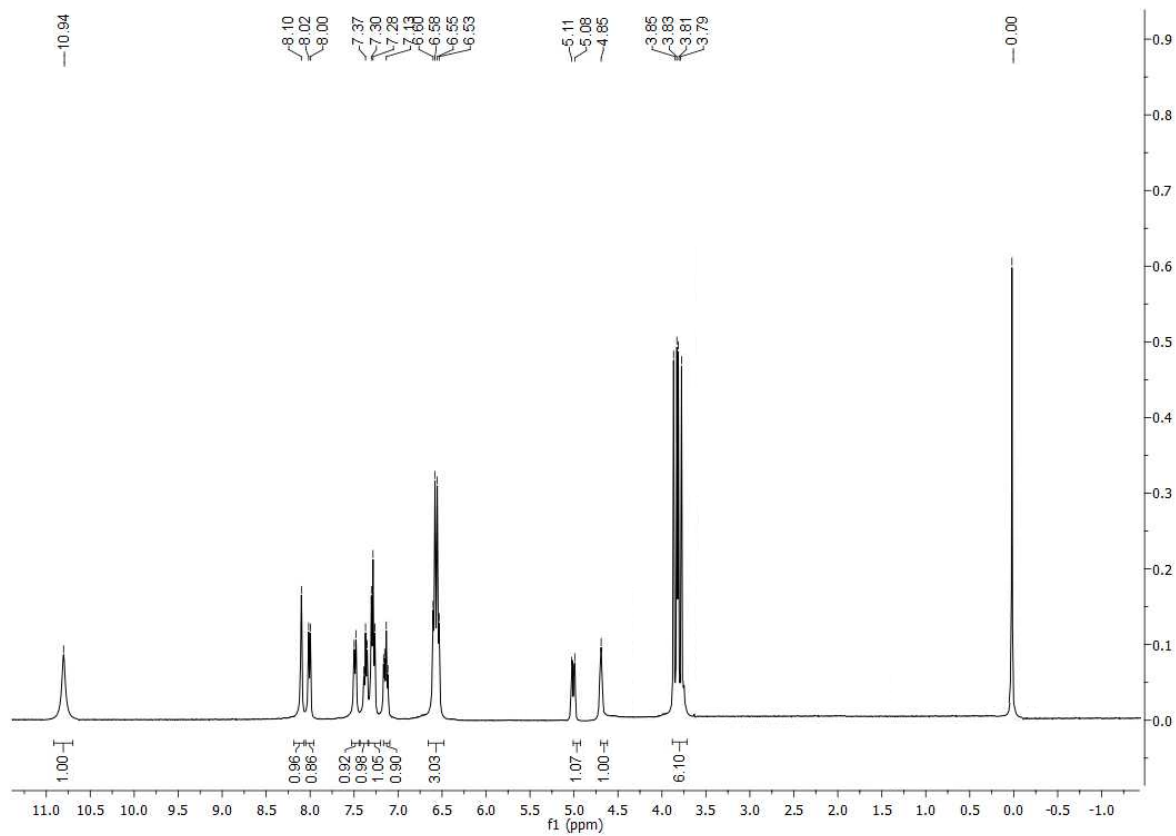


Figure S28: $^1\text{H-NMR}$ (400 MHz, CDCl_3) Spectrum of **4j**

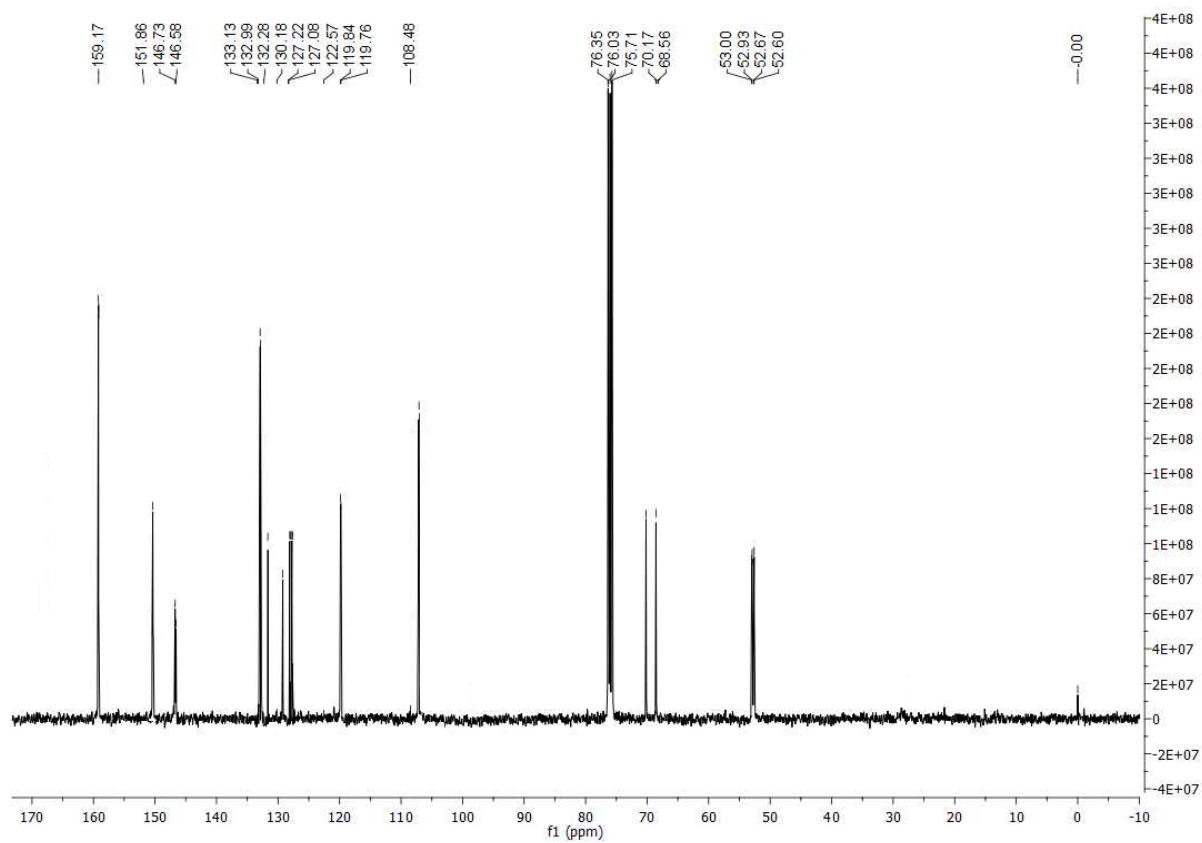


Figure S29: ^{13}C -NMR (100 MHz, CDCl_3) Spectrum of **4j**

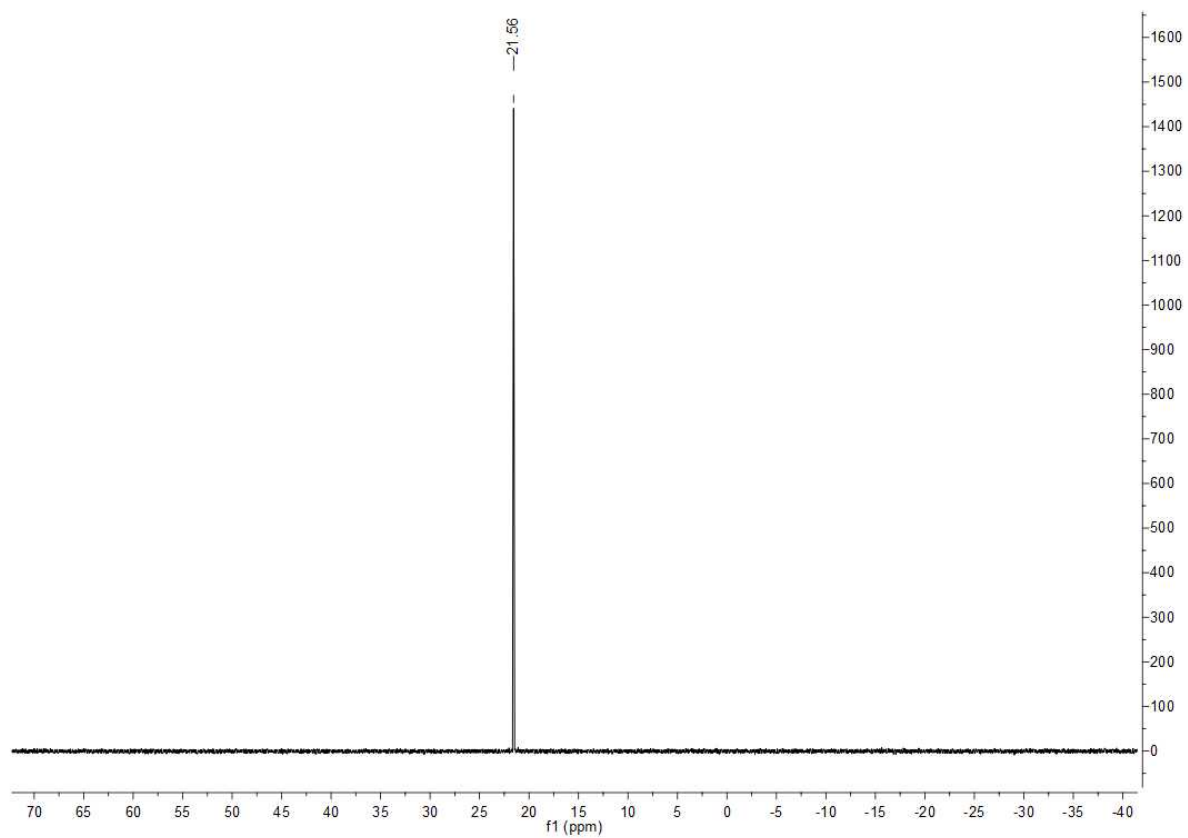
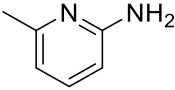
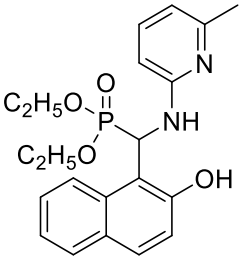
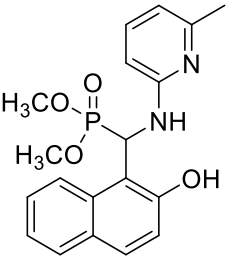
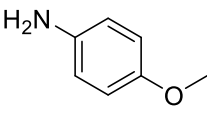
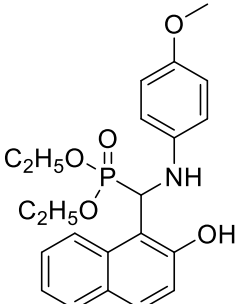
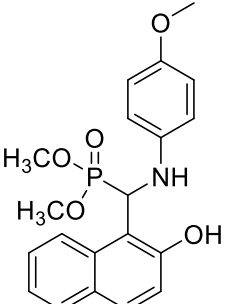
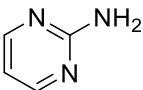
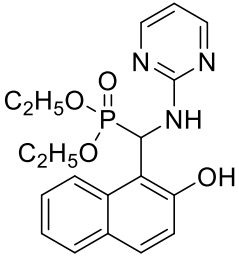
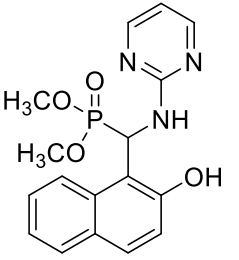
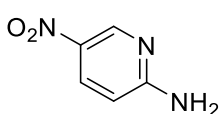
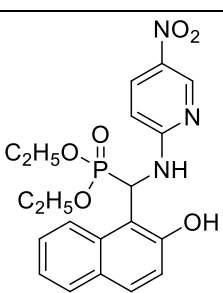
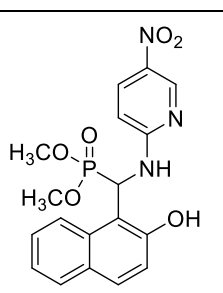
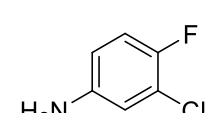
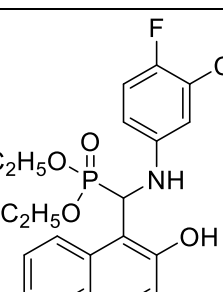
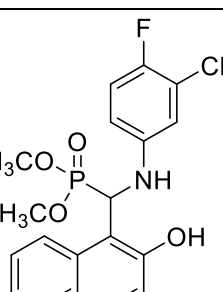


Figure S30: ^{31}P -NMR (161.9 MHz, CDCl_3) Spectrum of **4j**

Table S1 : Synthesis of α -aminophosphonates in presence of HAp NPs^a

Amines (2a-e)	Entry	Product using DEP	Entry	Product using DMP
	4a		4f	
Time hrs^a/min^b	10/6		8/6	
Yield (%)^{b/c}	75/94		80/93	
mp (°C)	156-168		161-163	
	4b		4g	
Time hrs^a/min^b	6/6		7/6	
Yield (%)^{b/c}	76/94		74/93	
mp (°C)	174-176		172-174	
	4c		4h	
Time hrs^a/min^b	8/6		10/6	
Yield (%)^{b/c}	85/93		78/92	
mp (°C)	148-150		185-187	

	4d		4i	
Time hrs^a/min^b	12/6		8/6	
Yield (%)^{b/c}	82/92		72/90	
mp (°C)	155-157		162-164	
	4e		4j	
Time hrs^a/min^b	12/6		6/6	
Yield (%)^{b/c}	84/93		74/90	
mp (°C)	160-162		170-172	

^aReaction conditions: 2-hydroxy-1-naphthaldehyde (**1**) (1.0 mmol), aryl amines (1.0 mmol) (**2a-e**) and diethyl/dimethyl phosphites (1.2 mmol) (**3a-b**) in the presence of 7.5 mol% of HAp NPs as a catalyst under solvent-free conditions. Isolated Yields; ^bConventional, ^cMicrowave irradiation.