Electronic Supplementary Material (ESI) for RSC Advances.

Transfer Hydrogenation of Aldehydes Catalyzed by Silyl Hydrido Iron Complexes Bearing a [PSiP] Pincer Ligand

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1 Table S1 Crystallographic Data for complexes 3 and **7**

Complex	**3**	**7**
Formula	$C_{42}H_{48}FeP_4Si$	$C_{28}H_{49}FeOP_3Si$
Mz	760.62	578.52
crystal system	monoclinic	monoclinic
space group	$P2_1/c$	$P2_1/n$
a [Å]	11.7181(7)	13.5670(5)
b [Å]	18.9232(6)	16.7800(5)
c [Å]	35.1134(2)	13.9927(5)
α[°]	90	90
β[°]	91.084(4)	106.554(3)
γ[°]	90	90
V [Å^3]	7784.8(6)	3053.46(2)
T [K]	200.15	153.15
Z	8	4
μ[mm^{-1}]	5.169	0.709
total reflns	26696	15439
unique reflns	11341	5786
R_{int}	0.0446	0.0385
R1[I>2σ(I)]	0.0515	0.0352
wR(F^2)[I>2σ(I]	0.1312	0.0877
R1(all data)	0.0710	0.0498
wR(F^2) (all data)	0.1419	0.0924
GOF on F^2	1.029	0.973

2 IR, ^{1}H NMR, ^{31}P NMR, ^{13}C NMR and ^{29}Si NMR spectrum of complexes 3, 6 and 7

IR spectrum of complex **3**

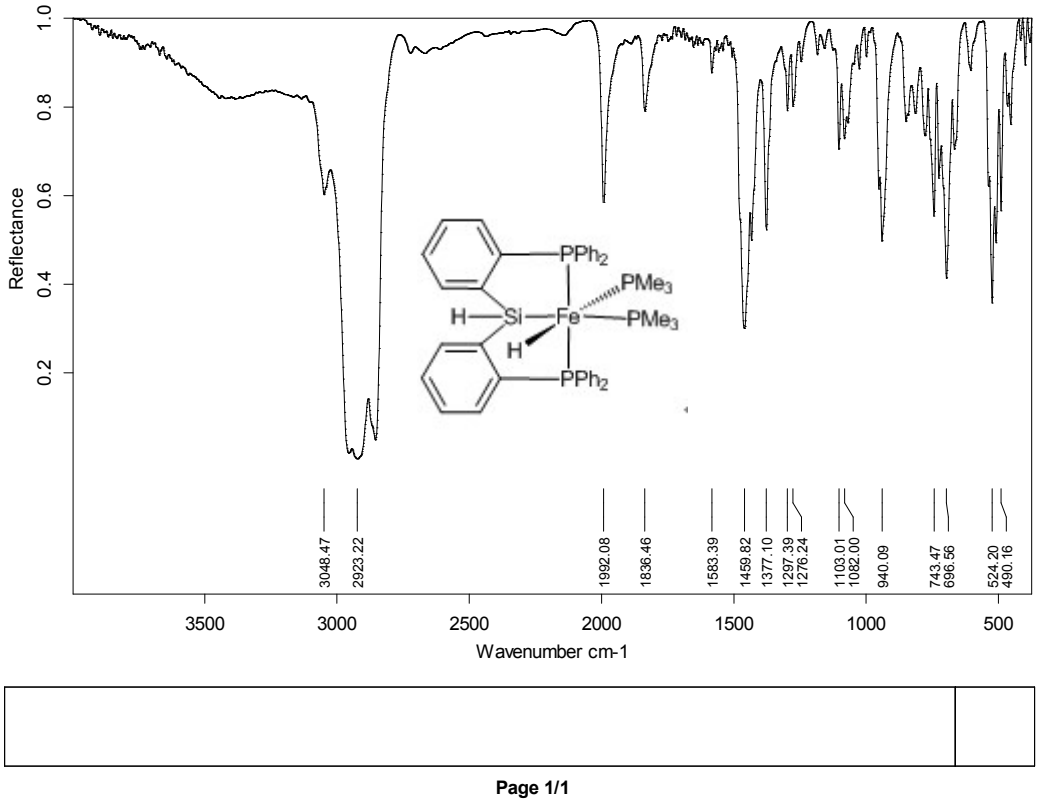


Fig. S1 IR spectrum of complex **3.**

^{1}H NMR of complex **3**

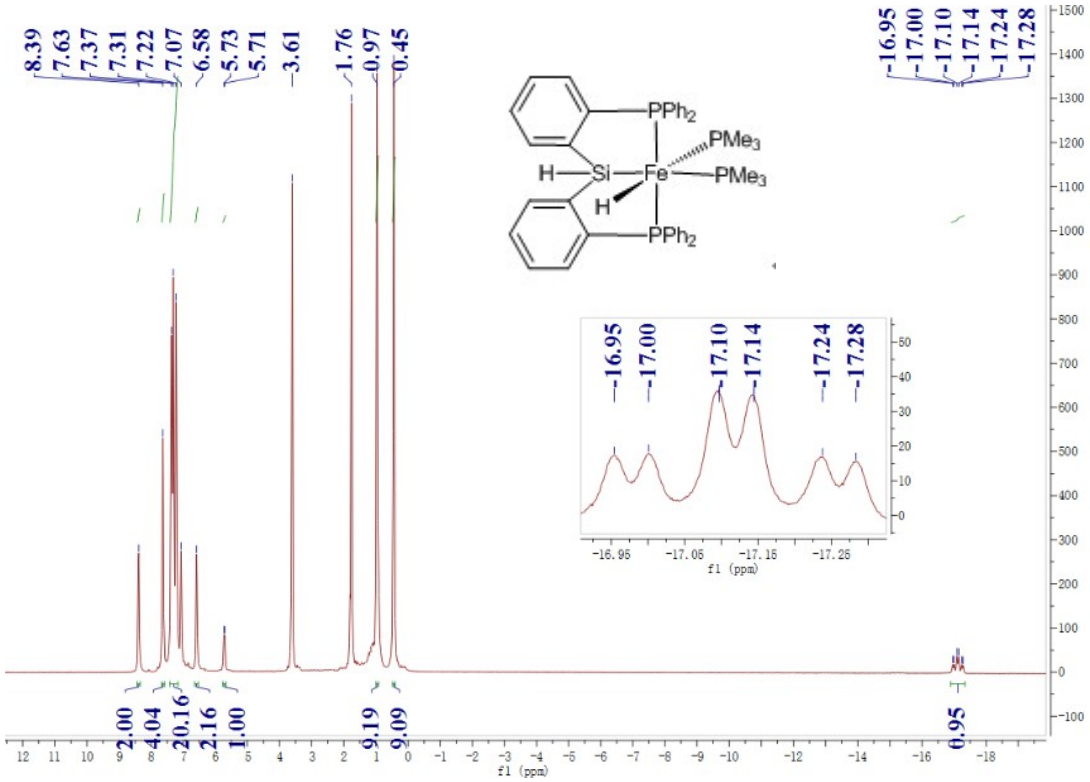


Fig. S2 ^{1}H NMR of complex **3** at -40℃

^{31}P NMR of complex **3**

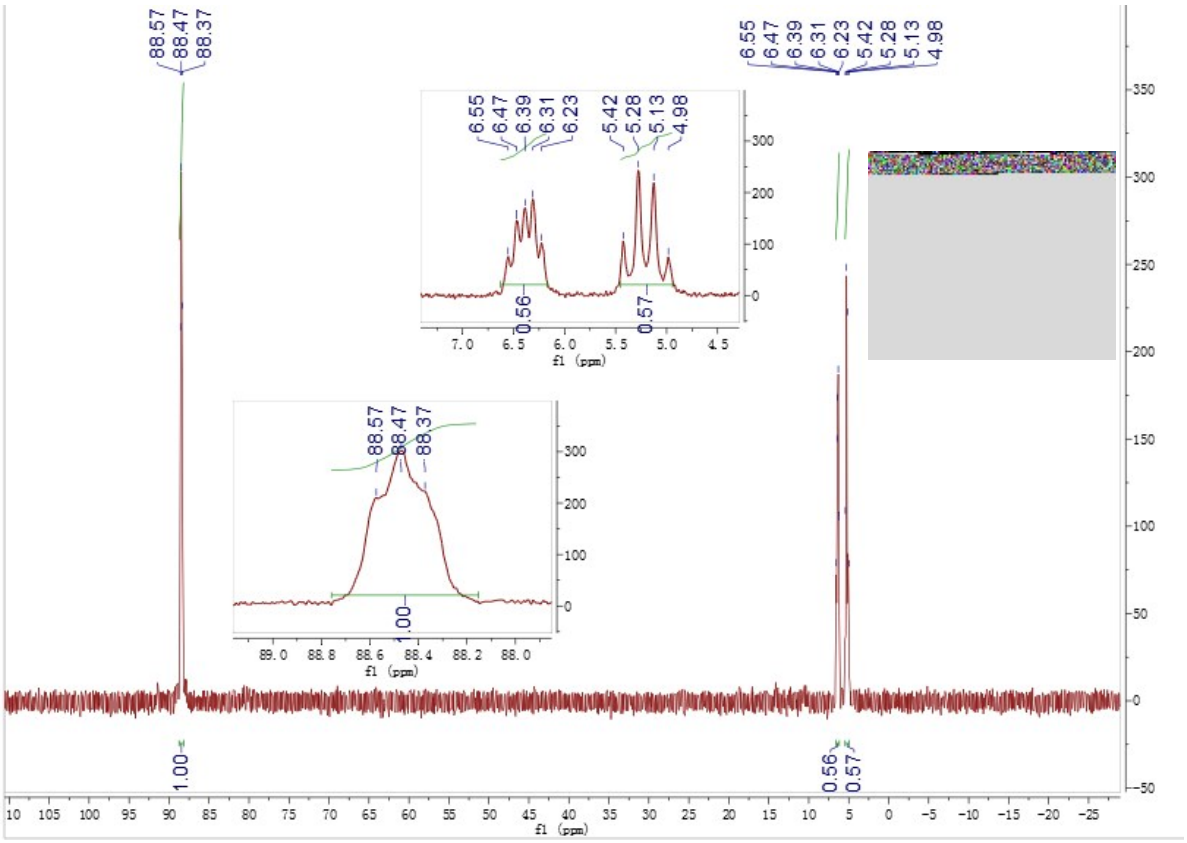


Fig. S3 ^{31}P NMR of complex **3** at -40℃

^{13}C NMR of complex **3**

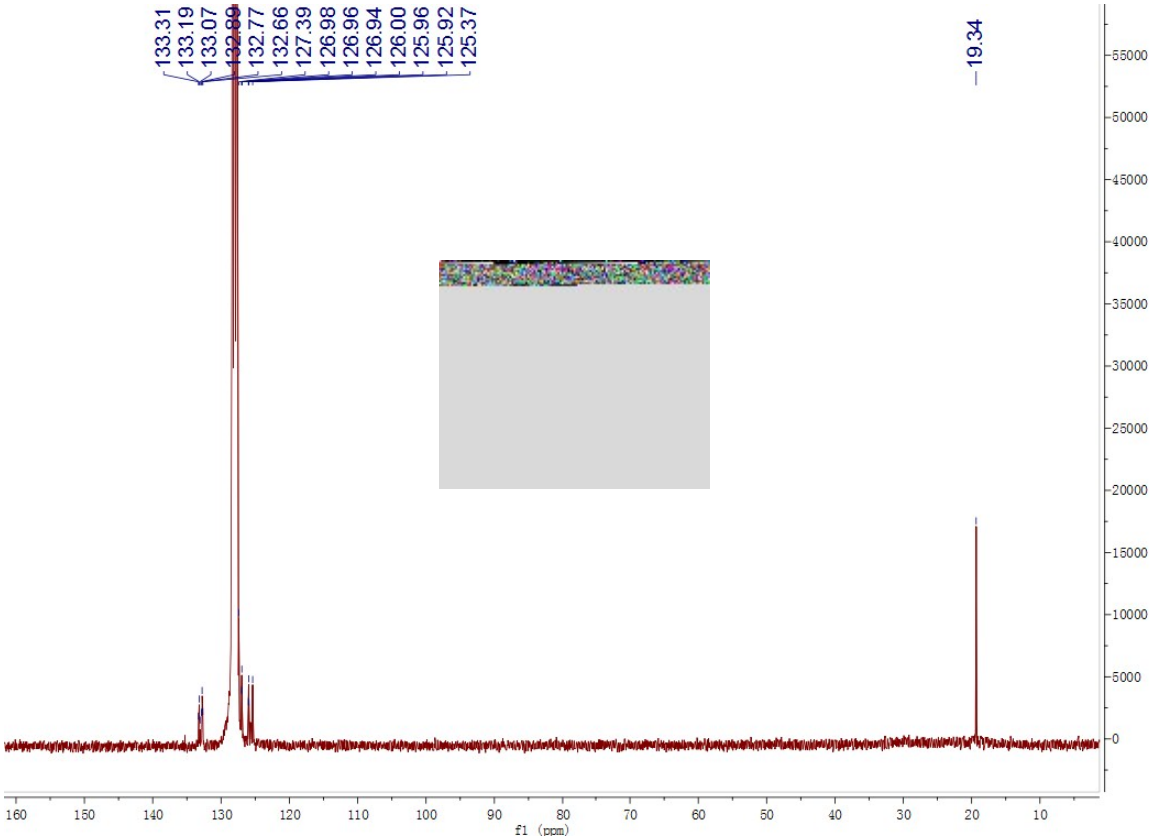


Fig. S4 ^{13}C NMR of complex **3.**

^{29}Si NMR of complex **3**

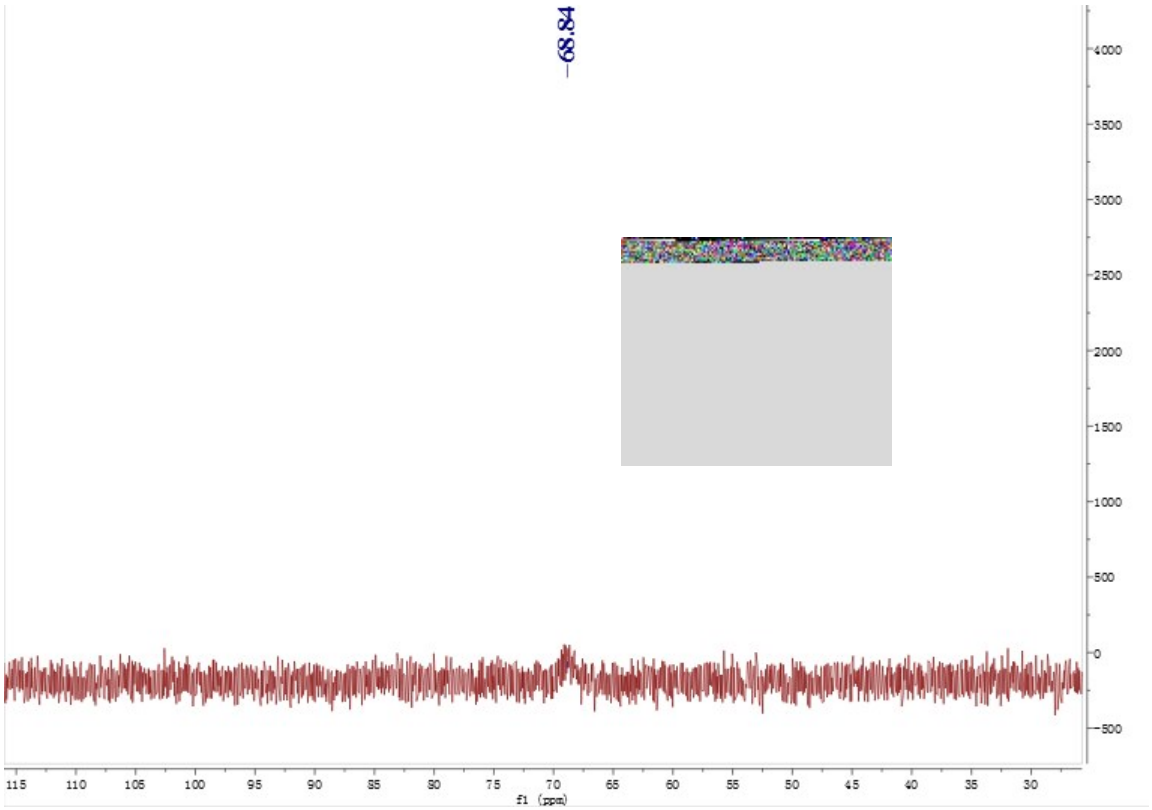


Fig. S5 ^{29}Si NMR of complex **3.**

IR spectrum of complex **6**

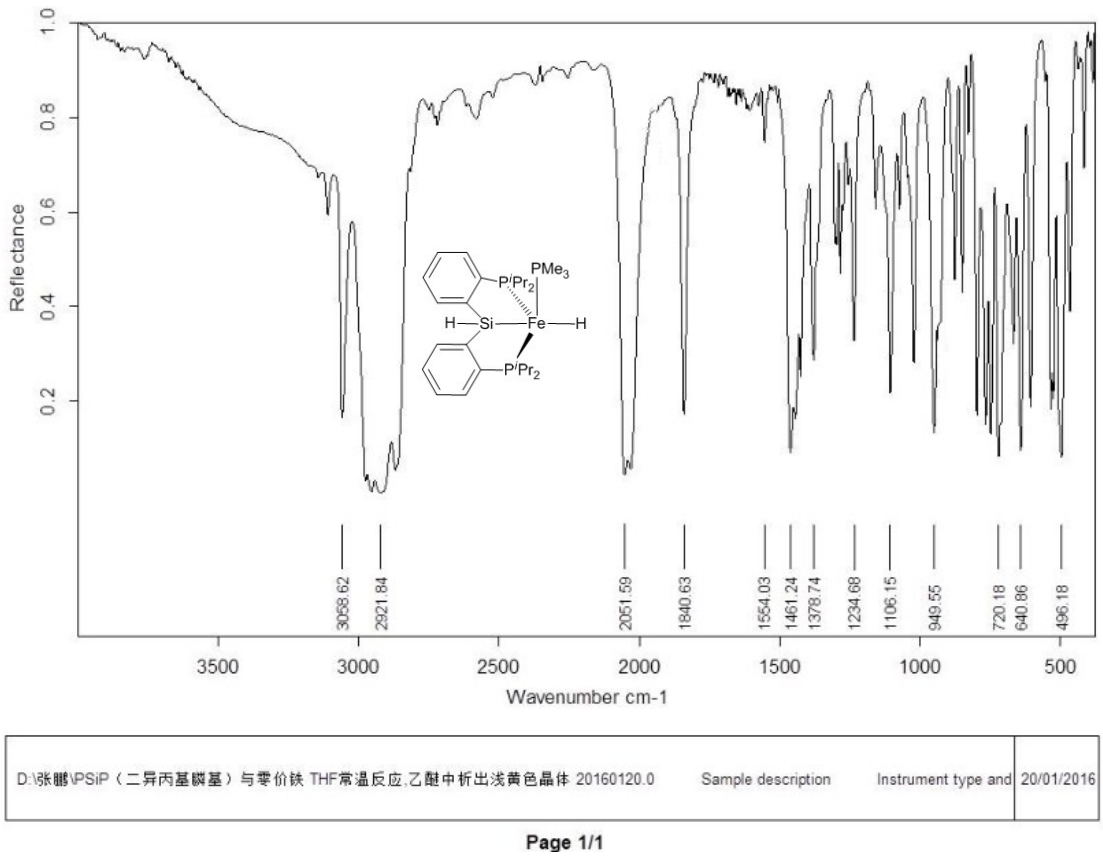


Fig. S6 IR spectrum of complex **6.**

^{1}H NMR of complex **6**

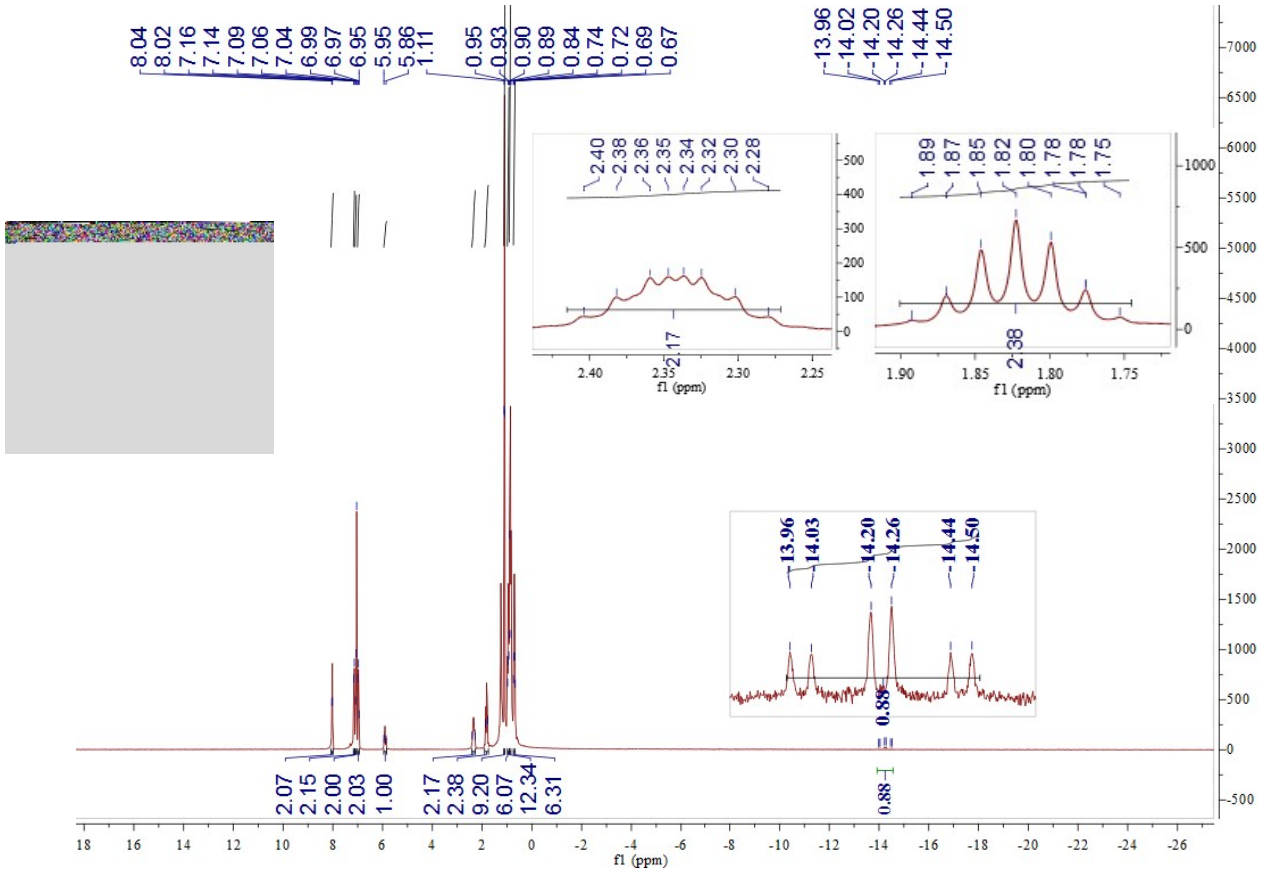


Fig. S7 ^{1}H NMR of complex **6.**

^{31}P NMR of complex **6**

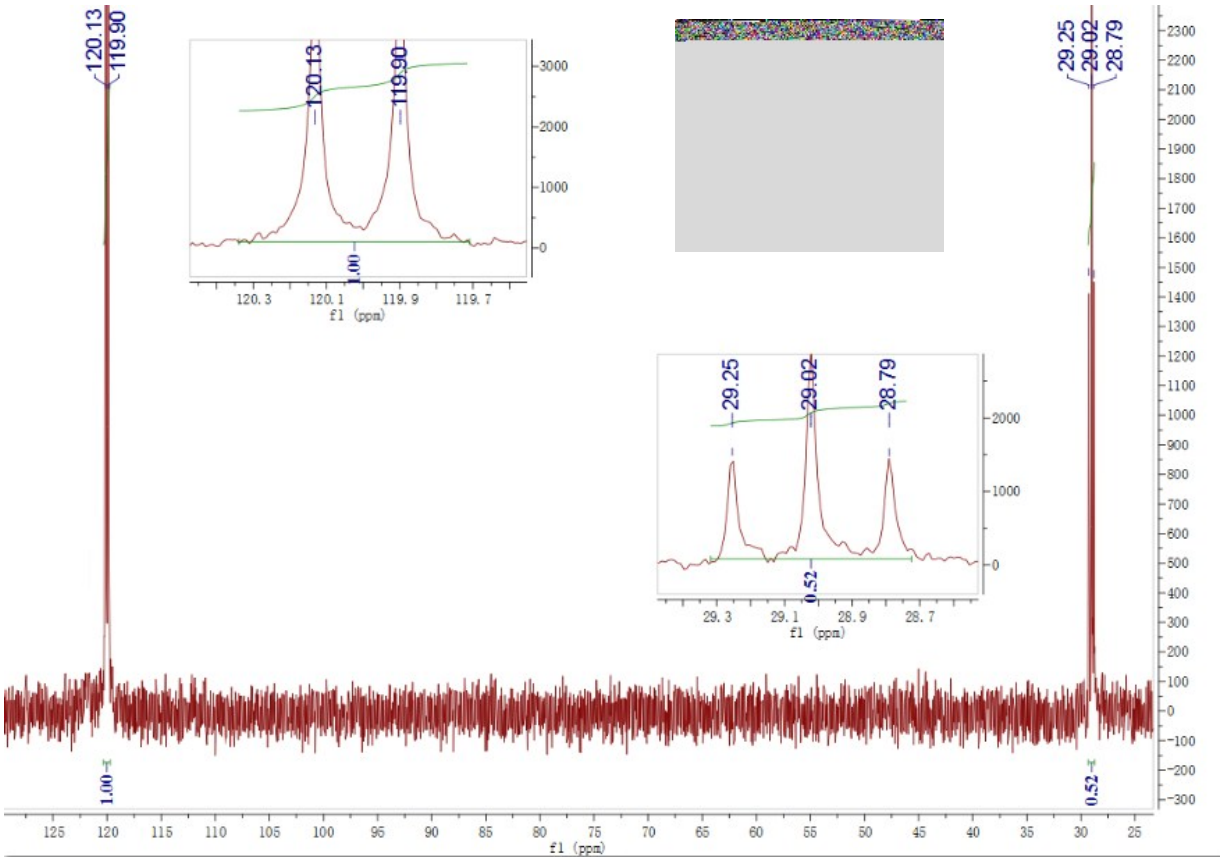


Fig. S8 ^{31}P NMR of complex **6.**

^{13}C NMR of complex **6**

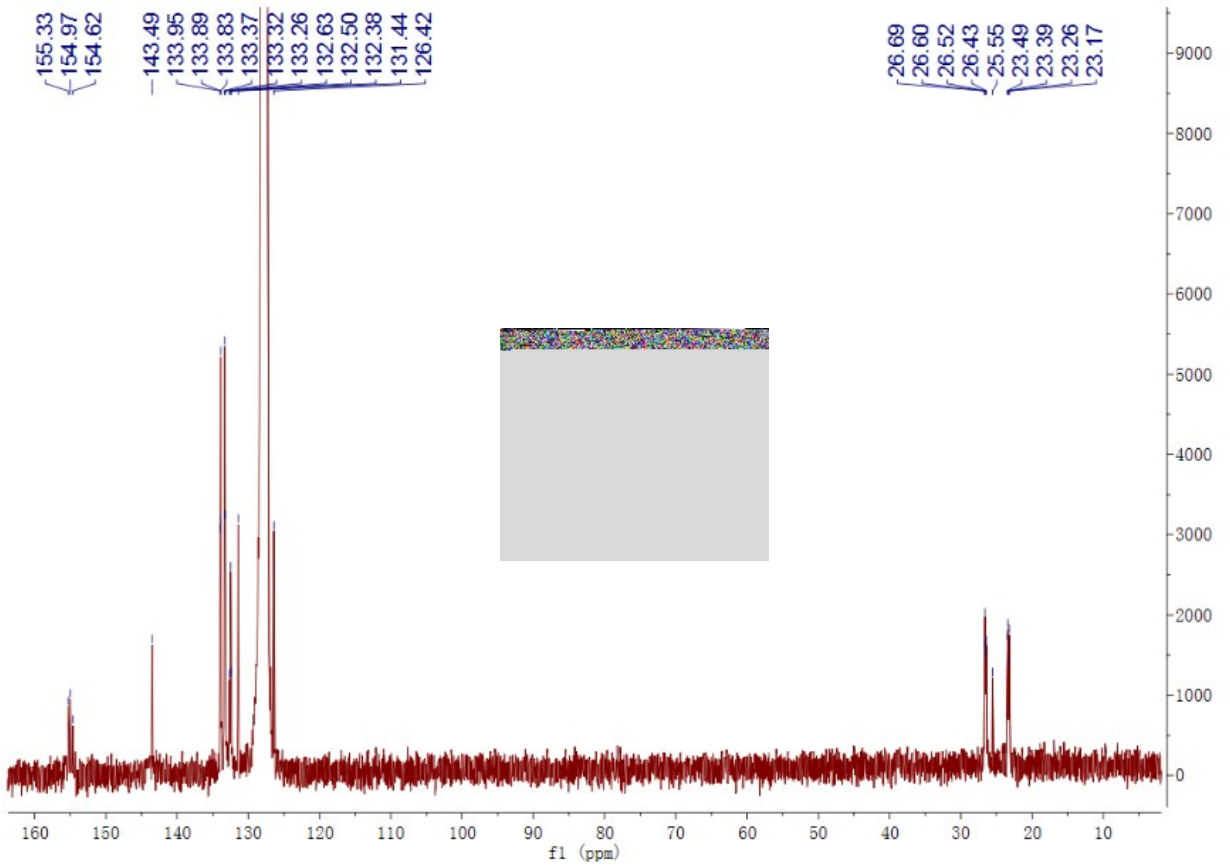


Fig. S9 ^{13}C NMR of complex **6.**

^{29}Si NMR of complex **6**

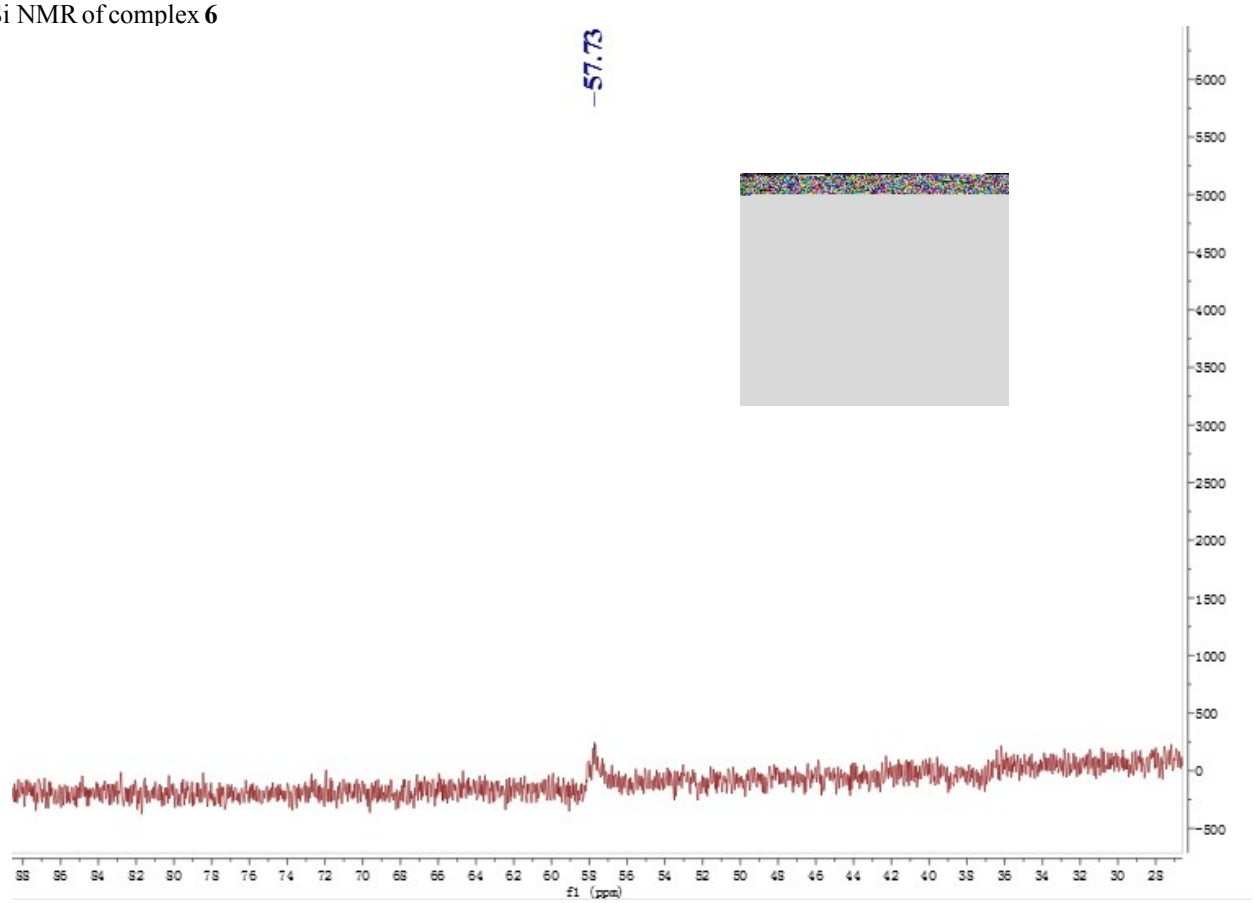


Fig. S10 ^{29}Si NMR of complex **6.**

IR spectrum of complex **7**

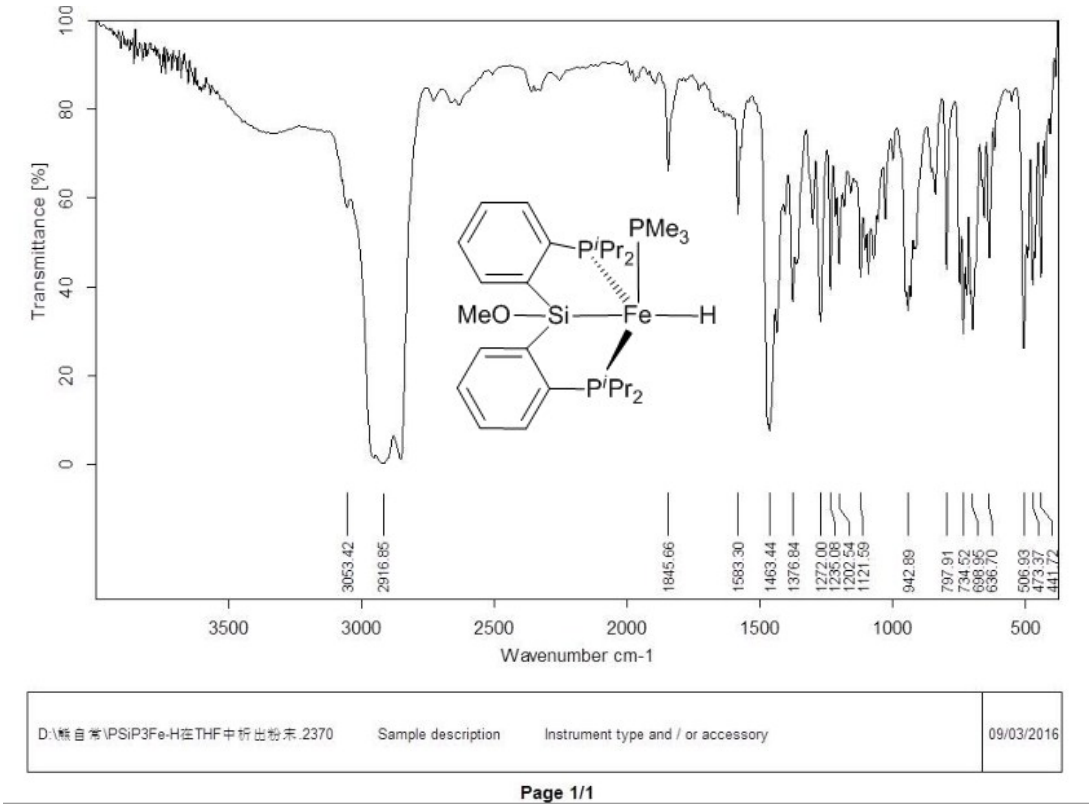


Fig. S11 IR spectrum of complex **7.**

^{1}H NMR of complex **7**

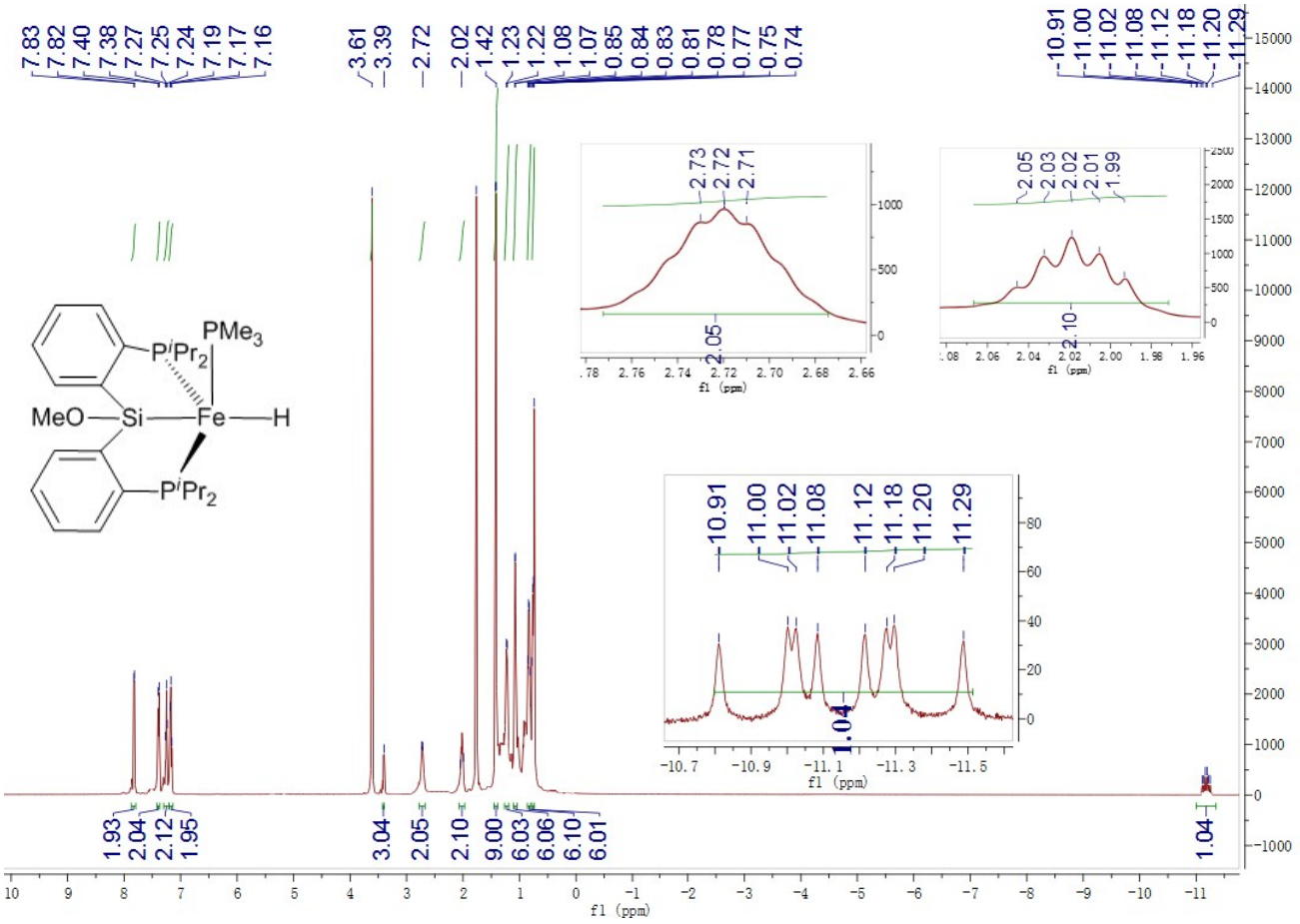


Fig. S12 ^{1}H NMR of complex **7** at -40℃

^{31}P NMR of complex **7**

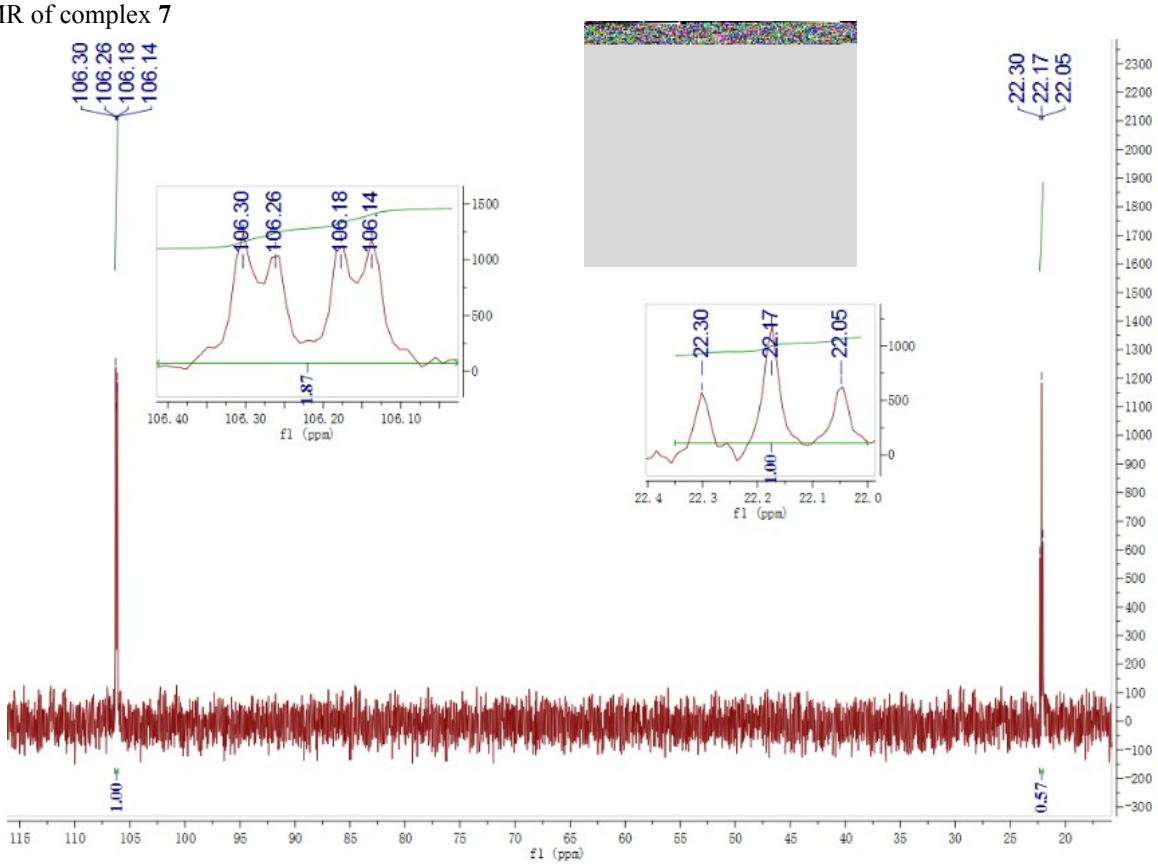


Fig. S13 ^{31}P NMR of complex **7.**

^{13}C NMR of complex **7**

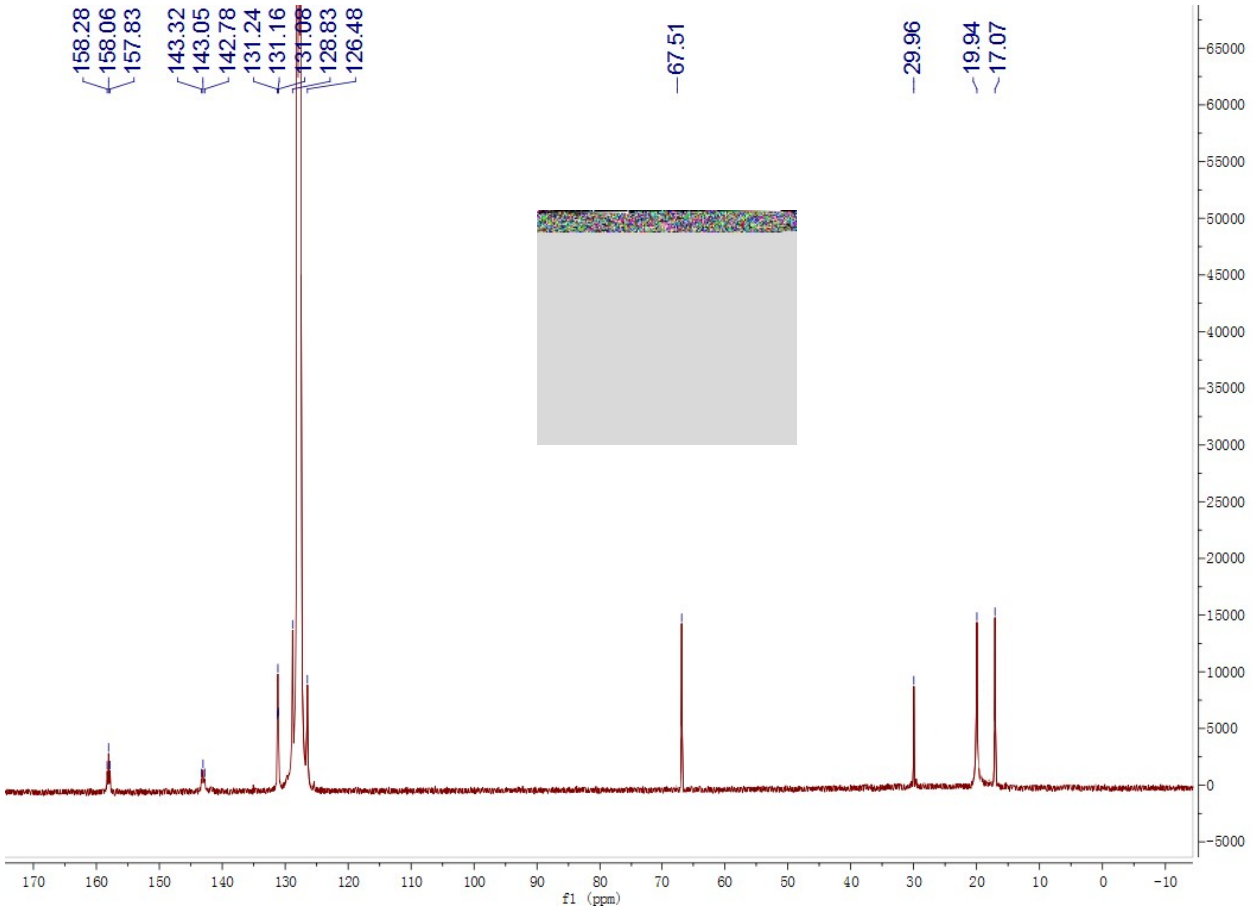


Fig. S14 ^{13}C NMR of complex **7.**

^{29}Si NMR of complex **7**

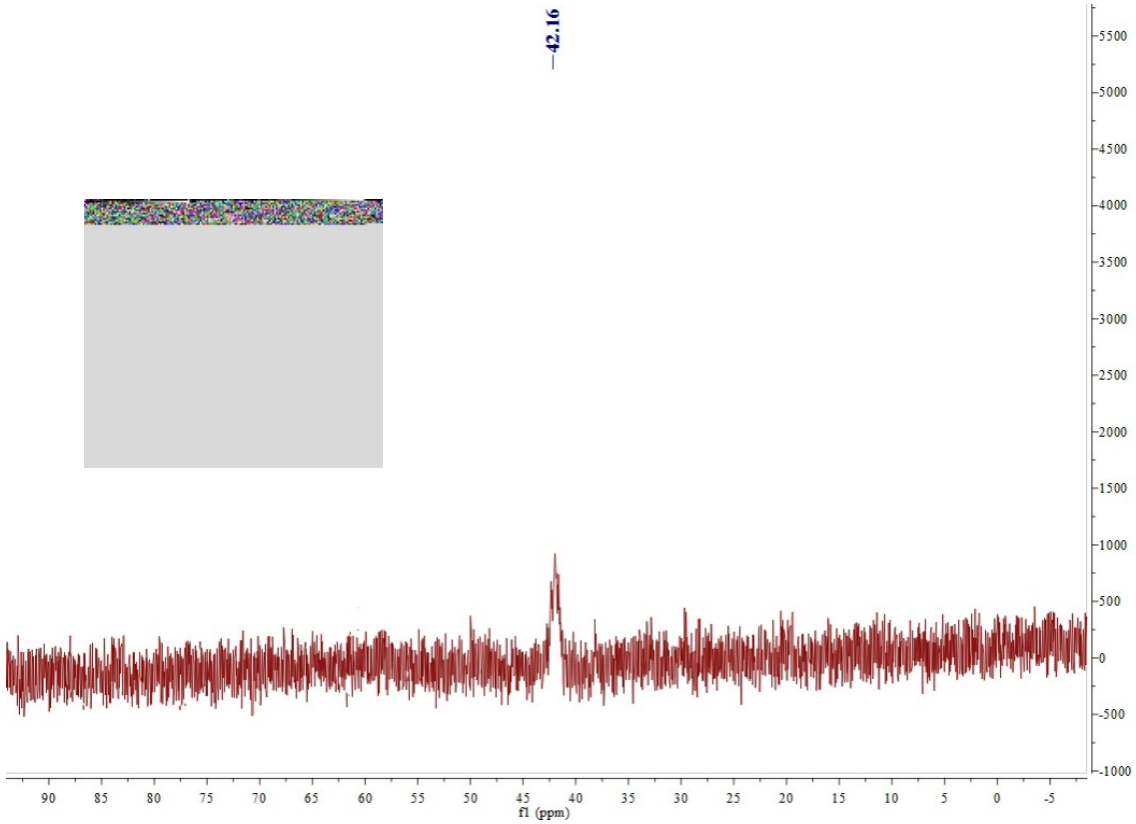
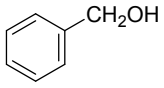
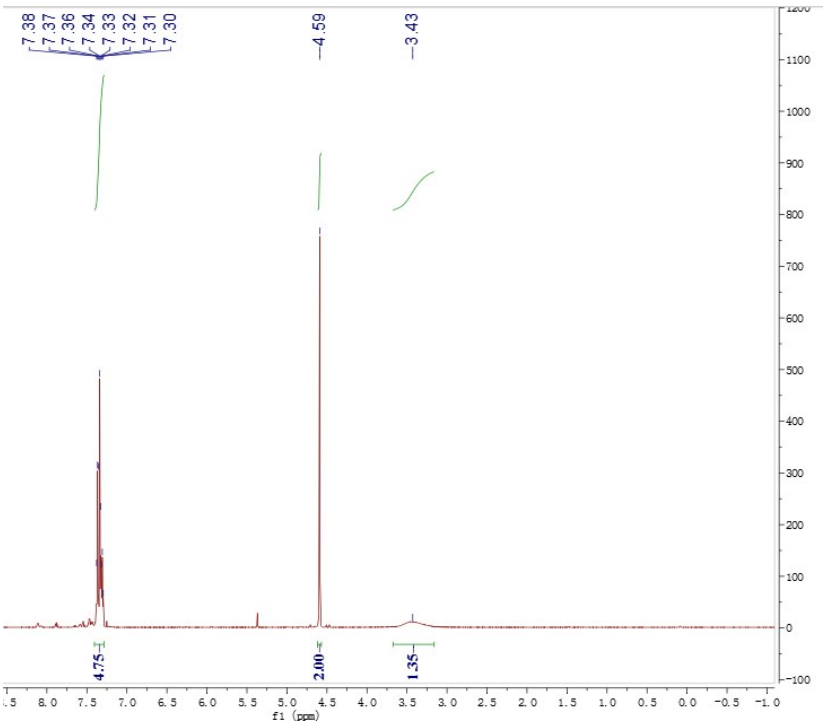
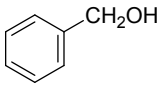


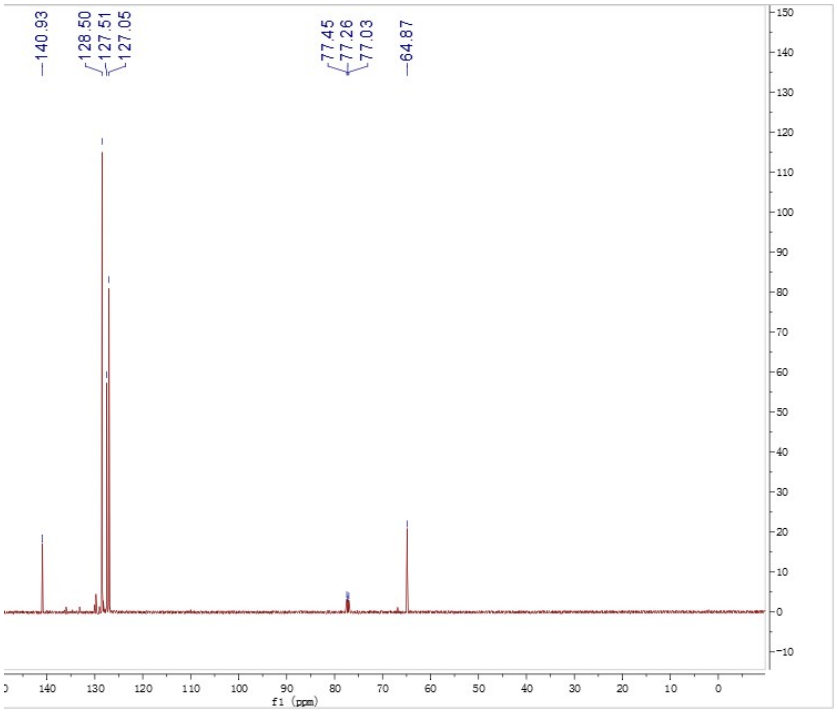
Fig. S15 ^{29}Si NMR of complex **7.**

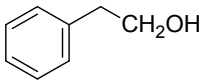
3 NMR spectra of the catalytic products

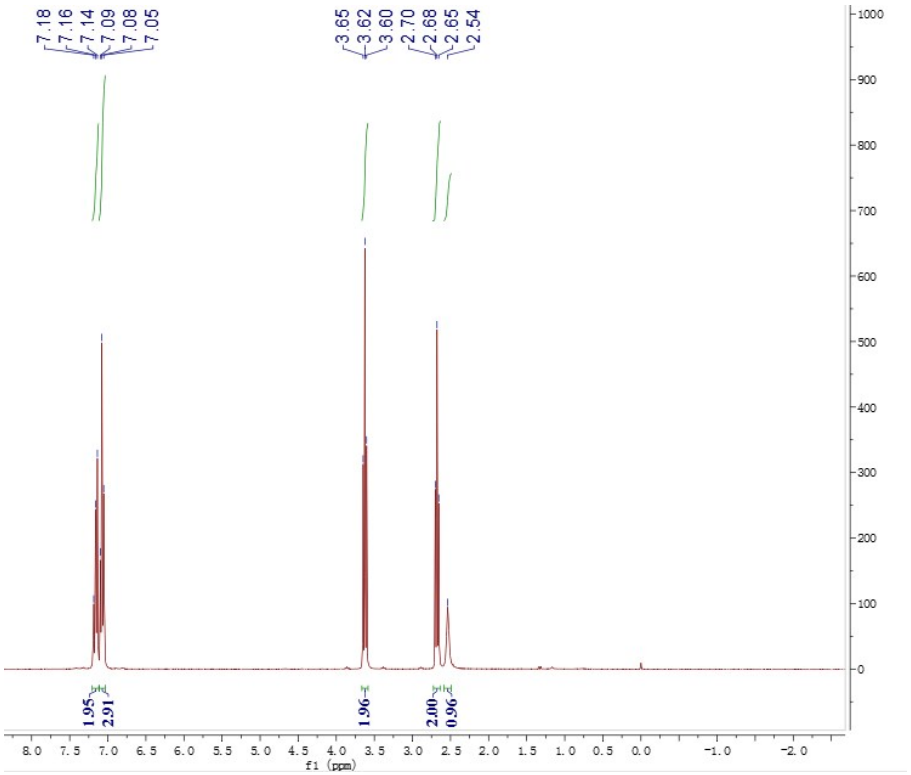
^{1}H NMR of compound 

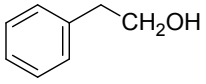


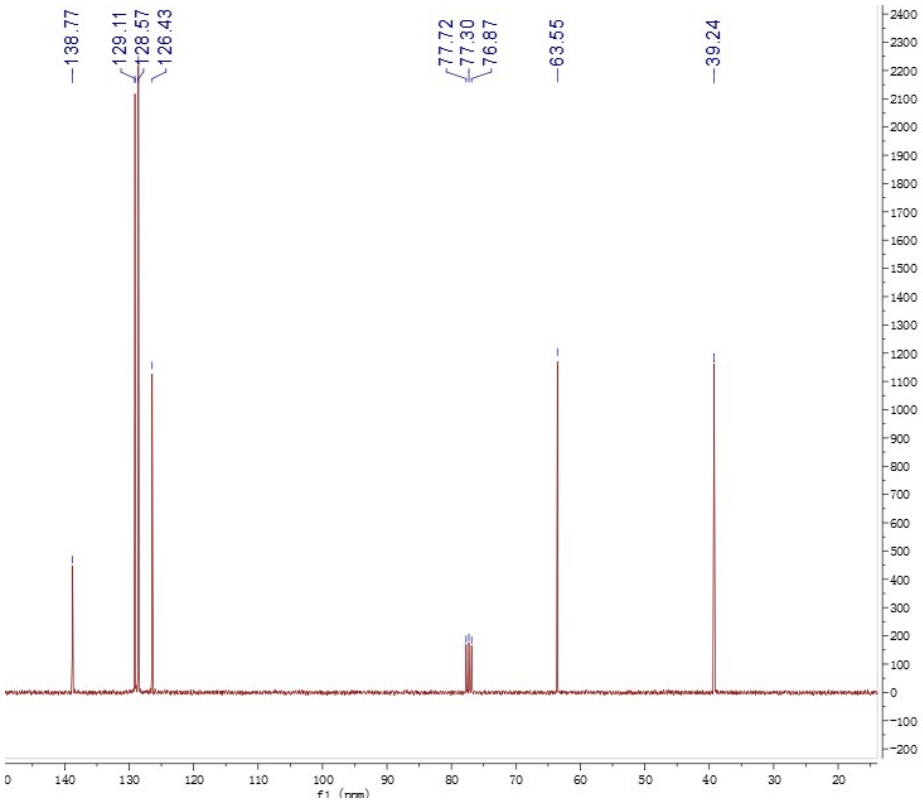
^{13}C NMR of compound 

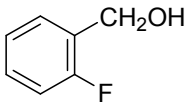


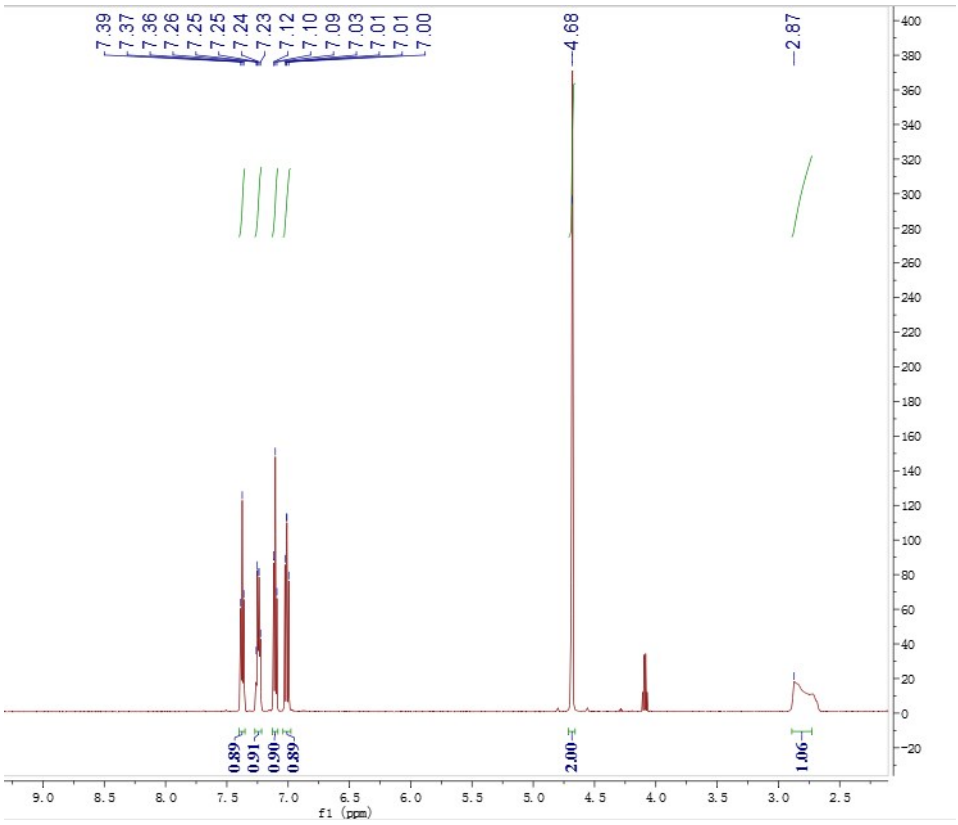
^{1}H NMR of compound 

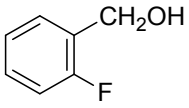


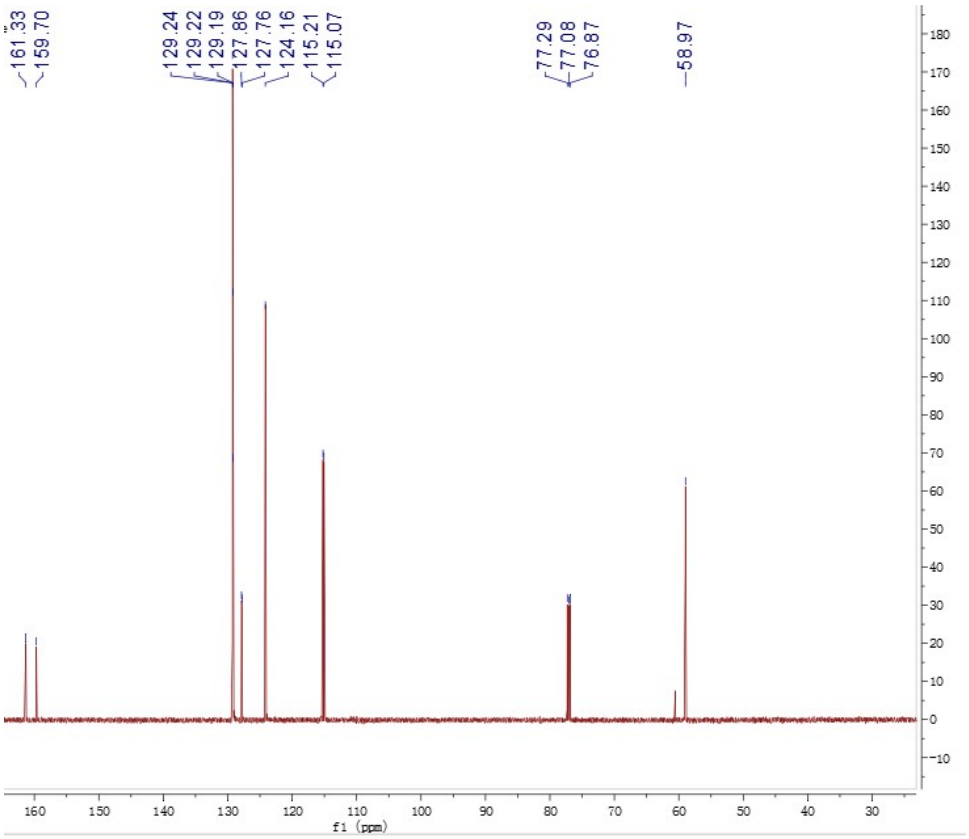
^{13}C NMR of compound 

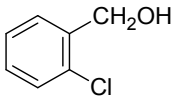


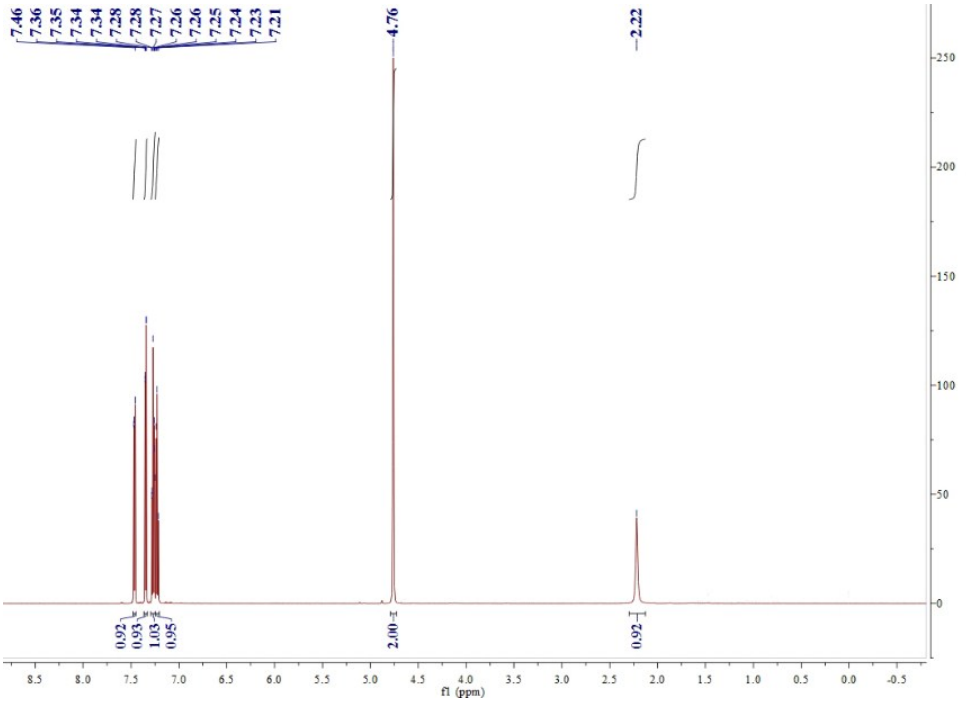
^{1}H NMR of compound 

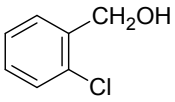


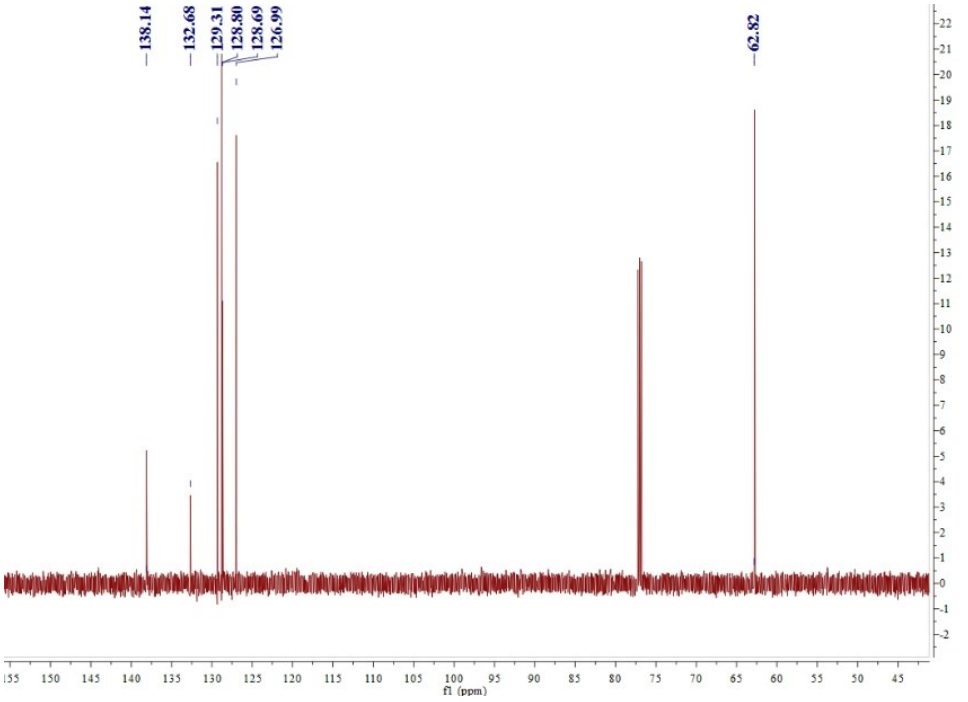
^{13}C NMR of compound 

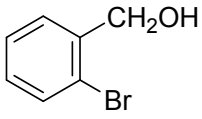


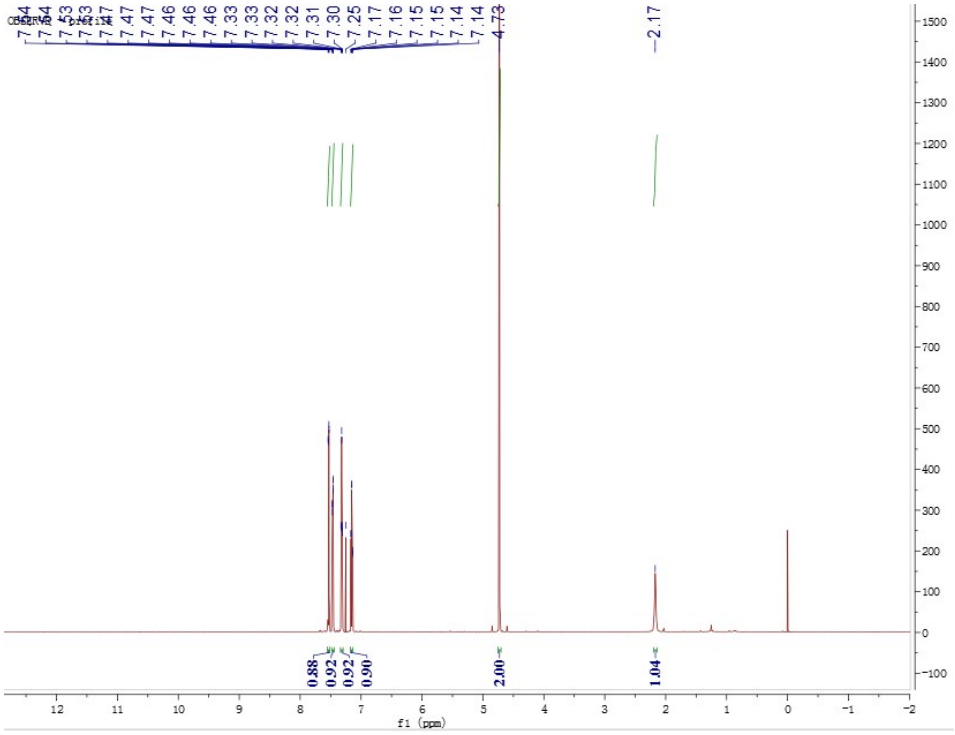
^{1}H NMR of compound 

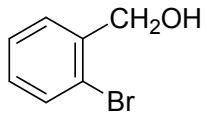


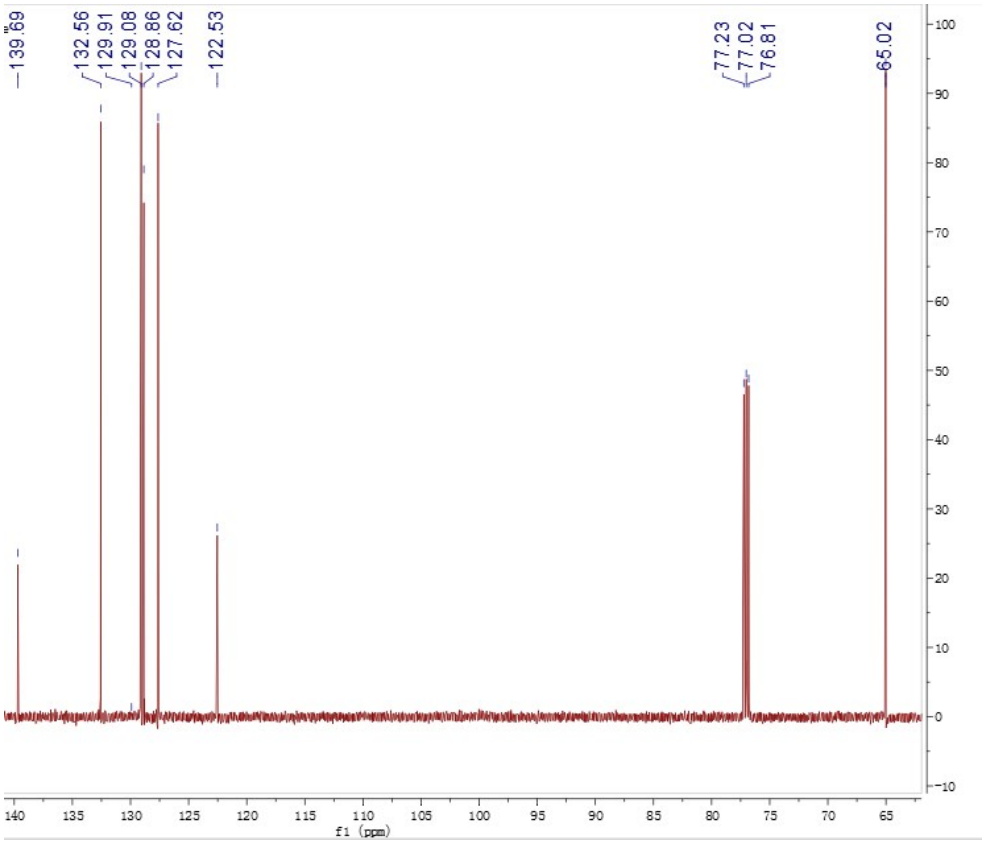
^{13}C NMR of compound 

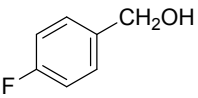


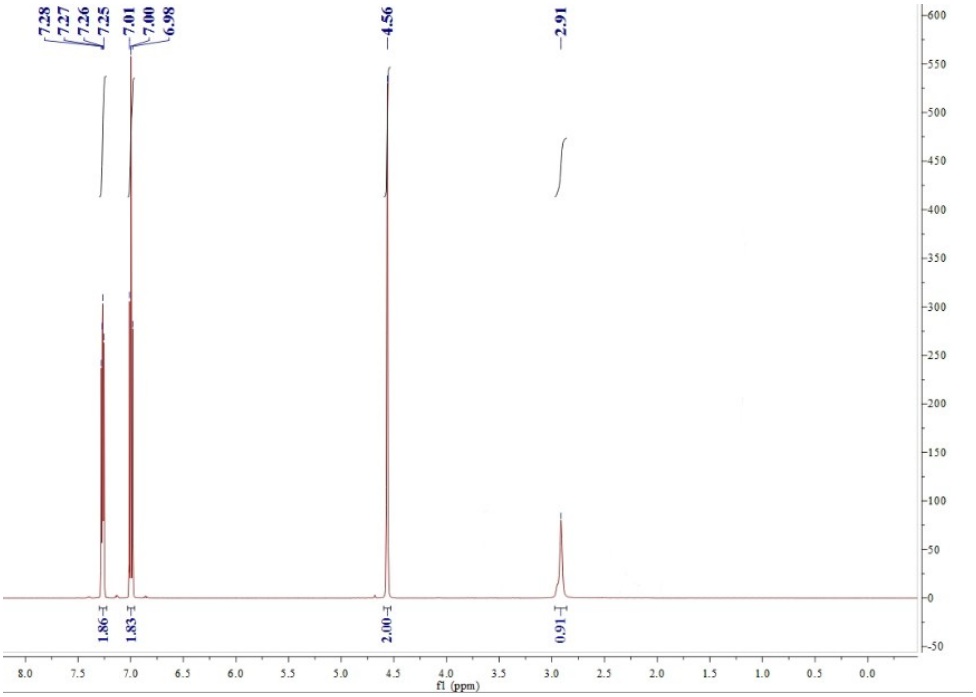
^{1}H NMR of compound 

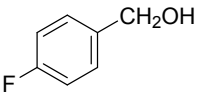


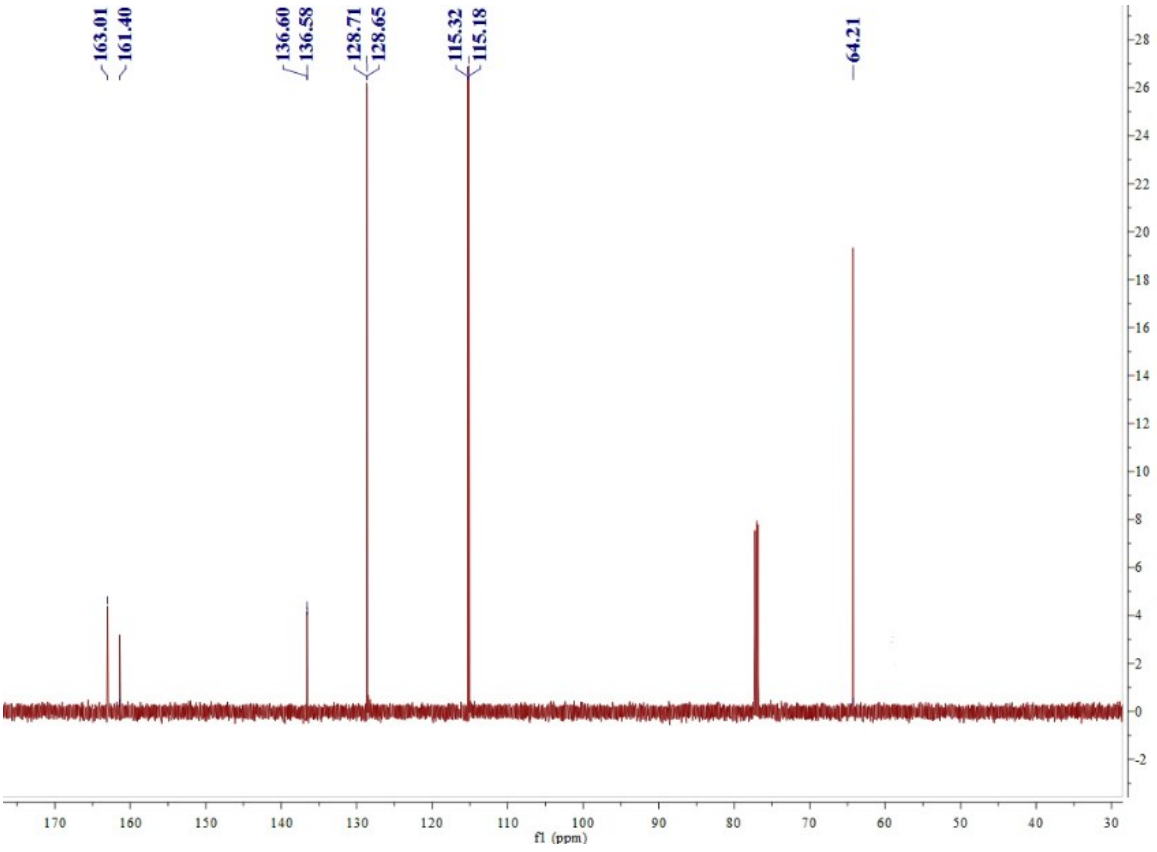
^{13}C NMR of compound 

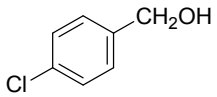


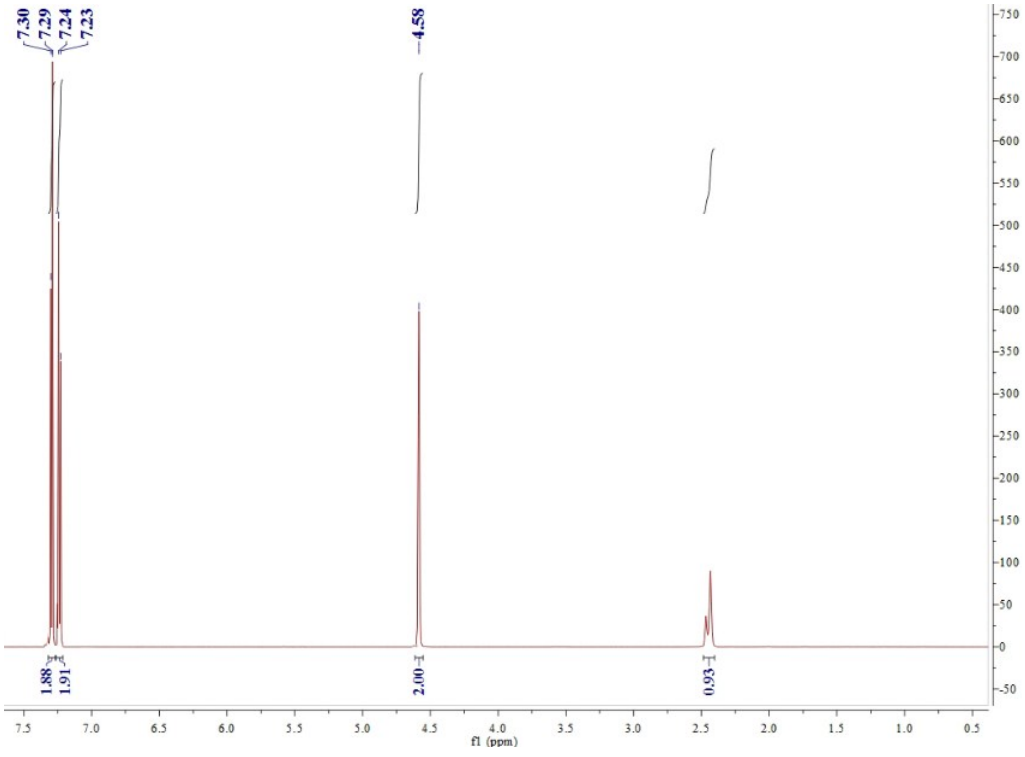
^{1}H NMR of compound 

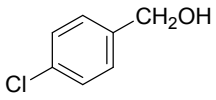


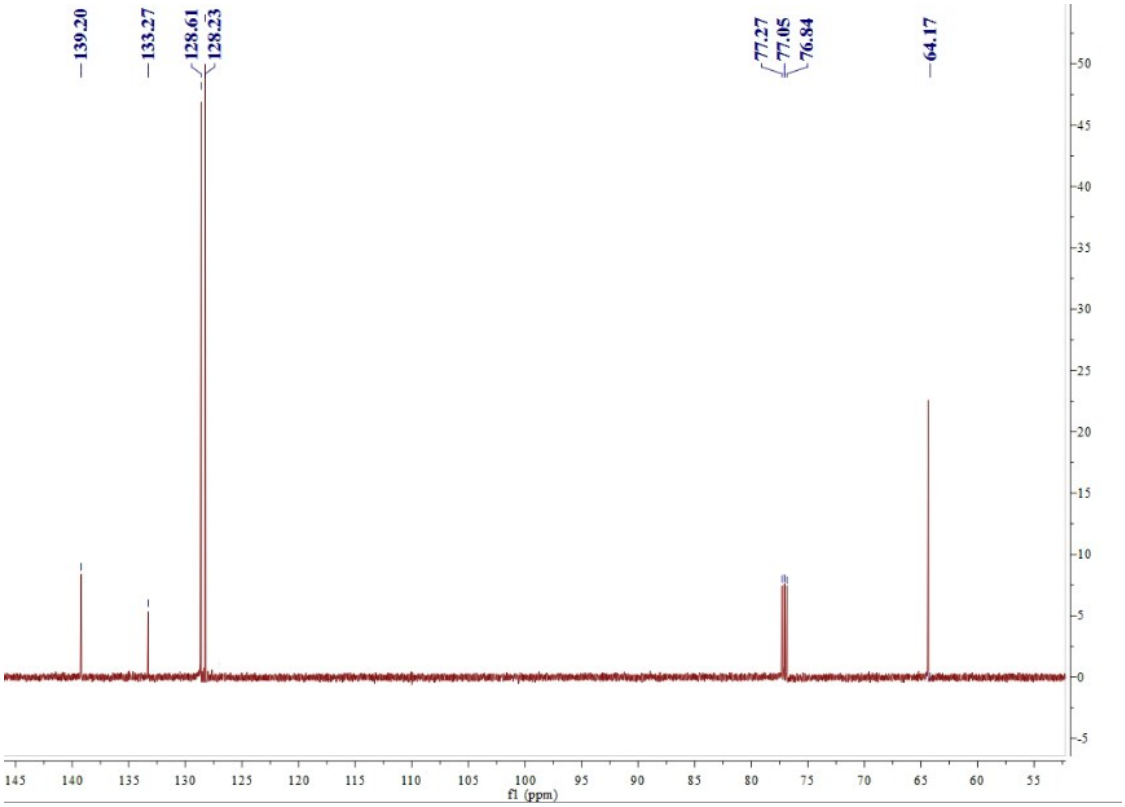
^{13}C NMR of compound 

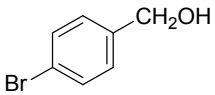


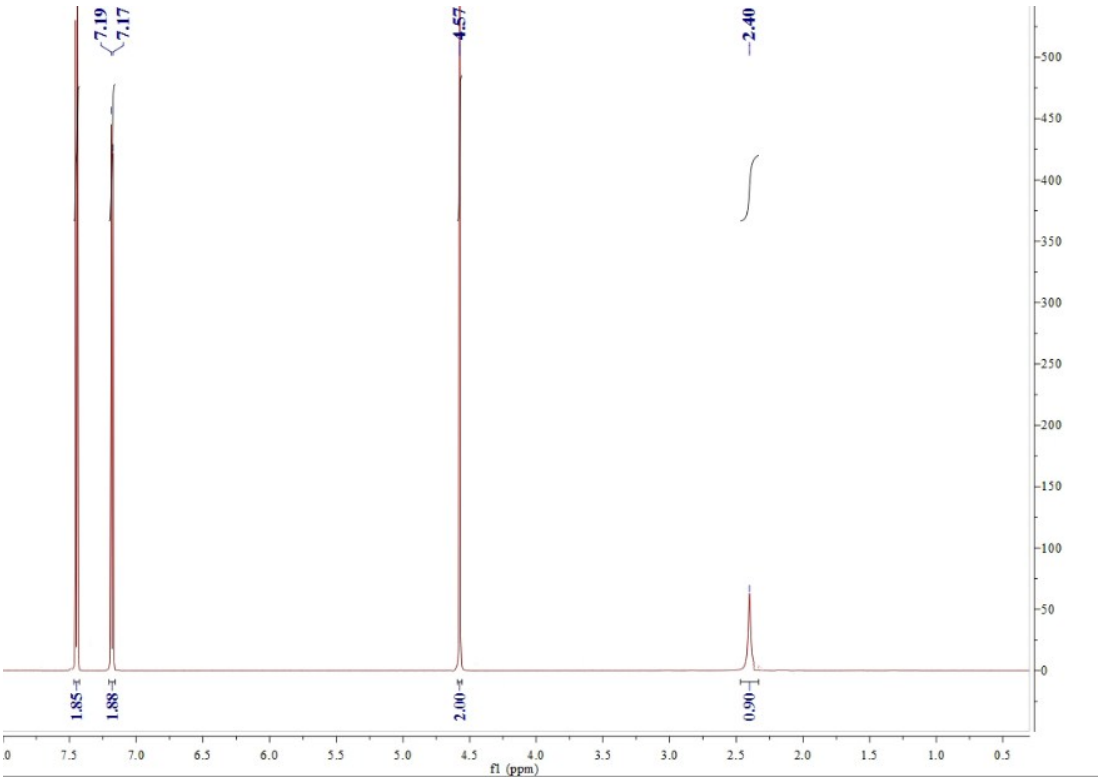
^{1}H NMR of compound 

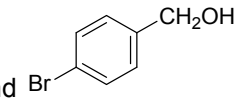


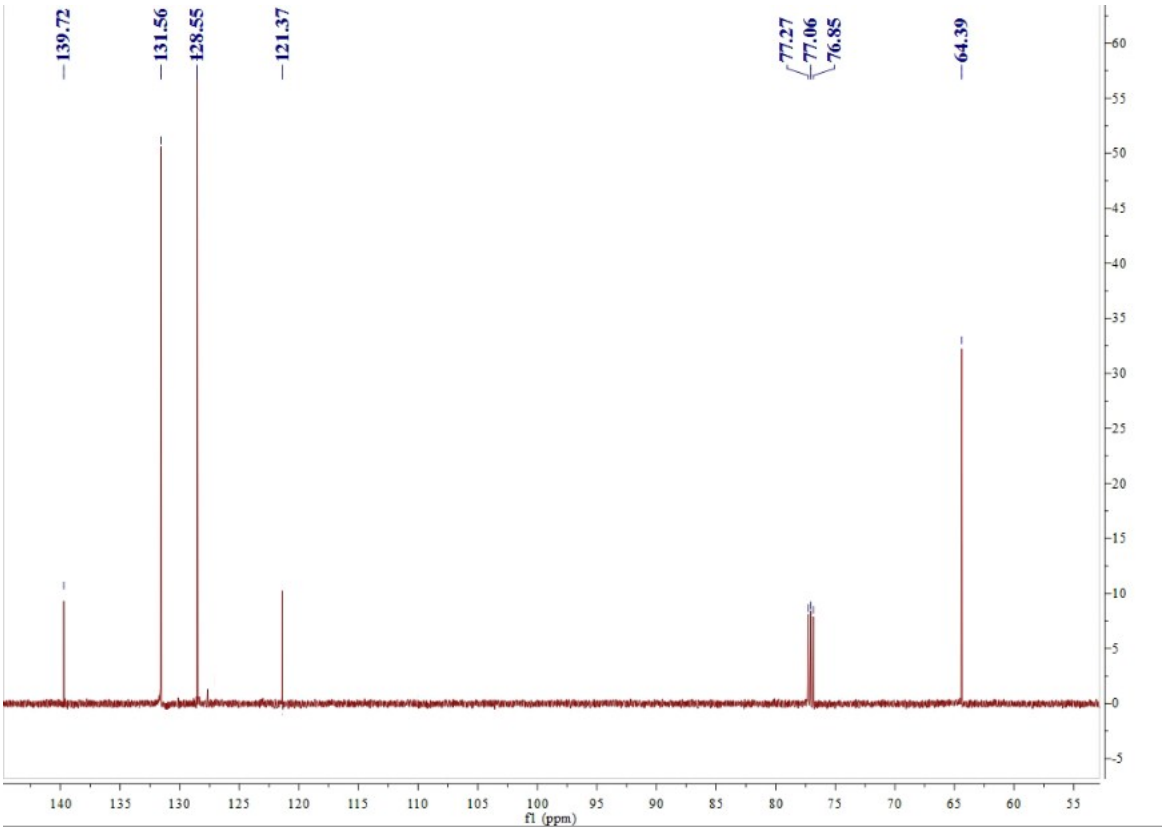
^{13}C NMR of compound 

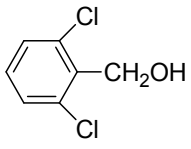


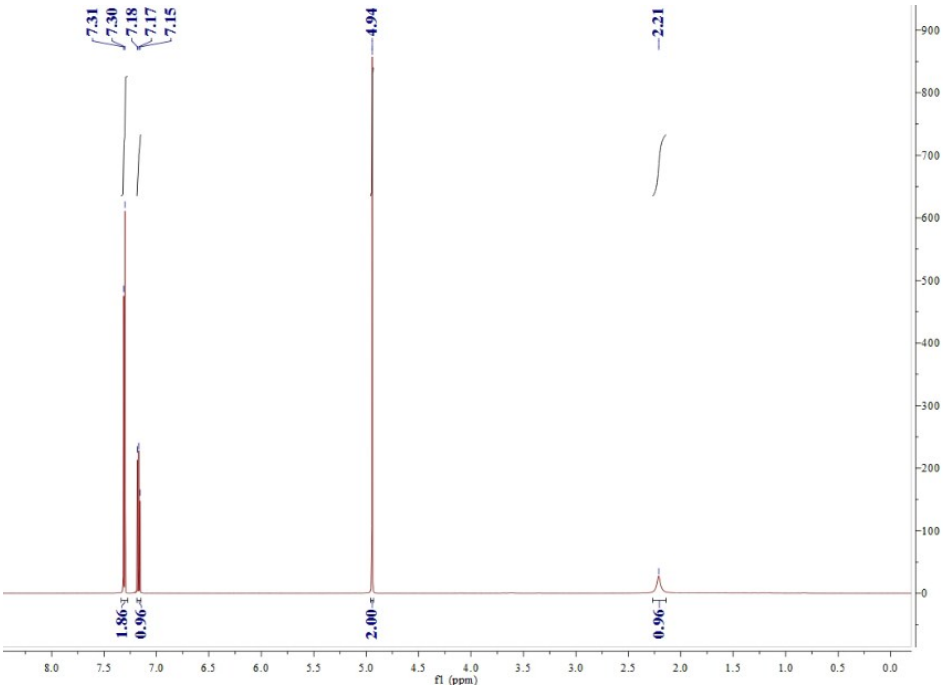
^{1}H NMR of compound 

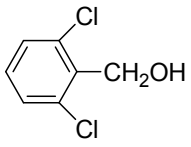


^{13}C NMR of compound 

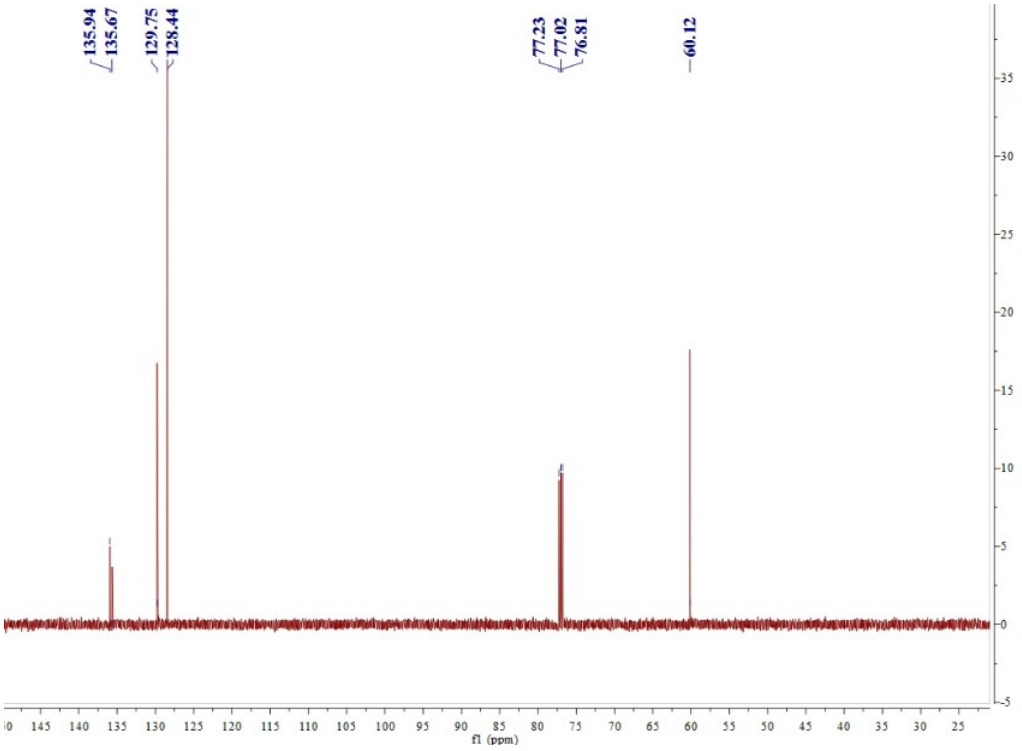


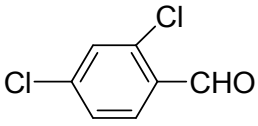
^{1}H NMR of compound 



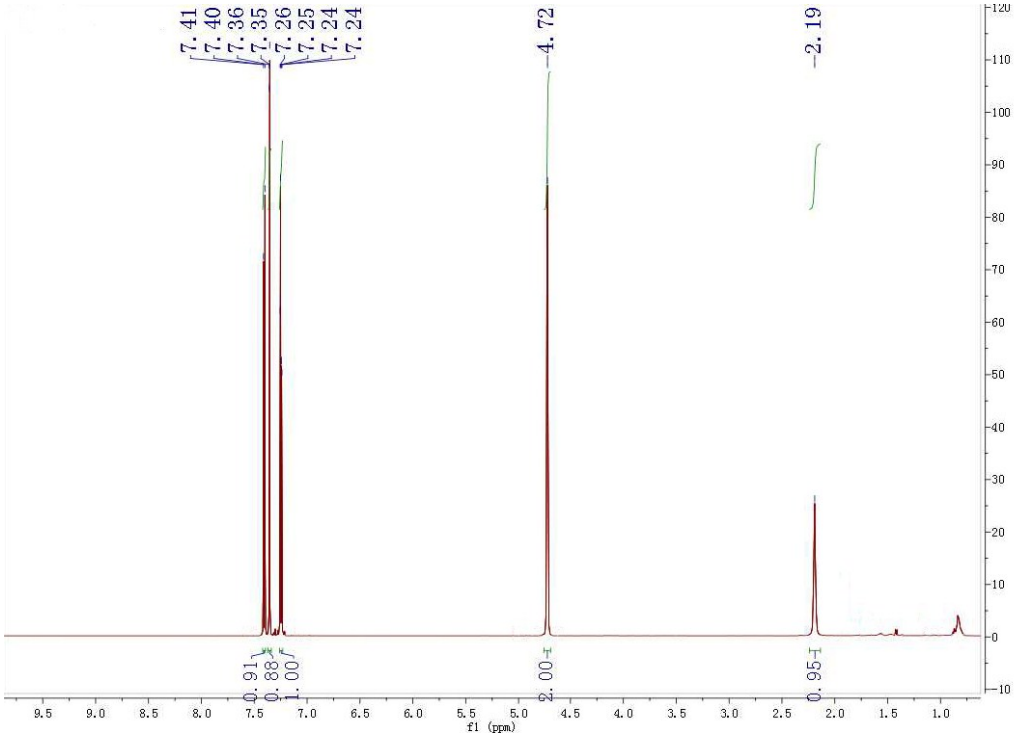


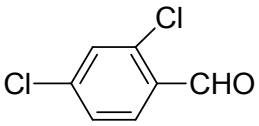
^{13}C NMR of compound



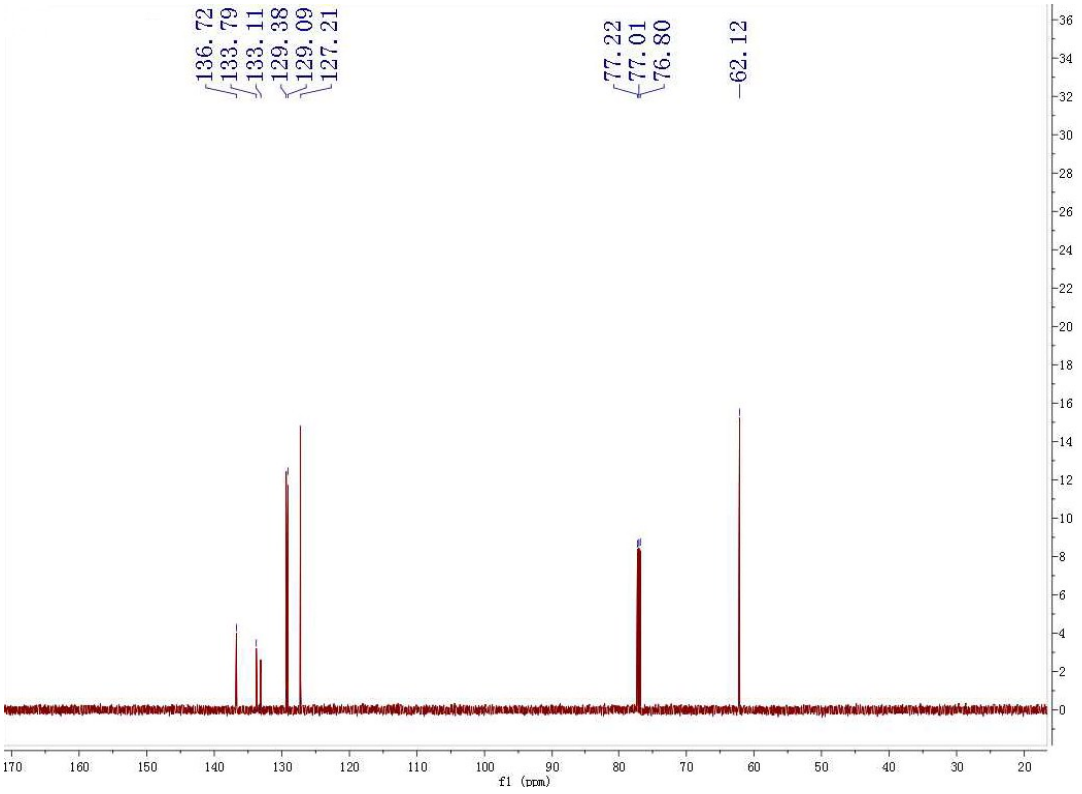


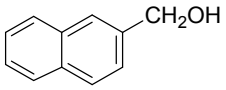
^{1}H NMR of compound





^{13}C NMR of compound





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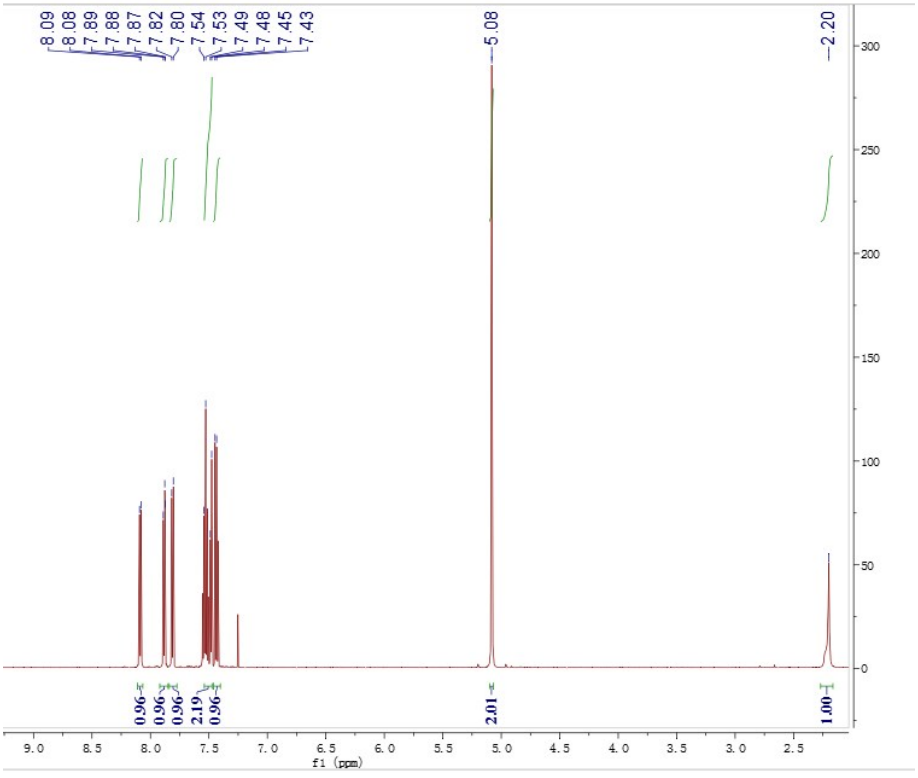
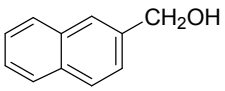
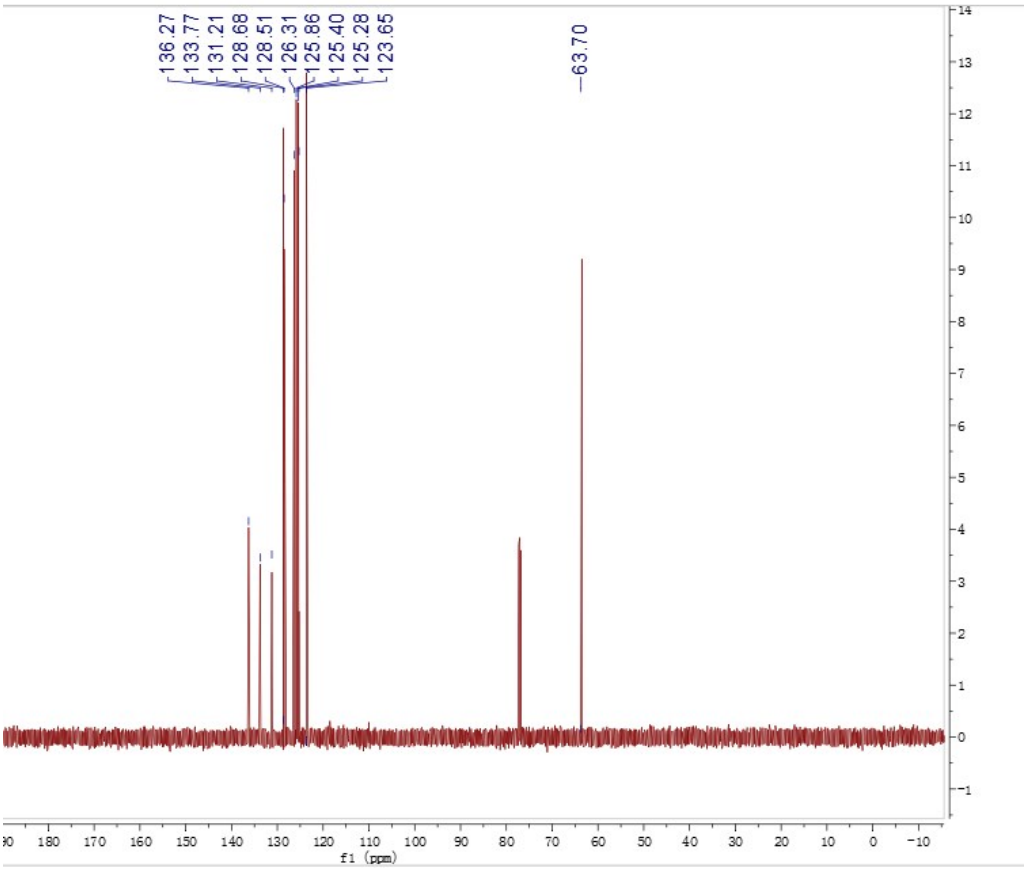
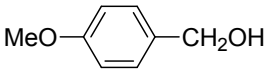
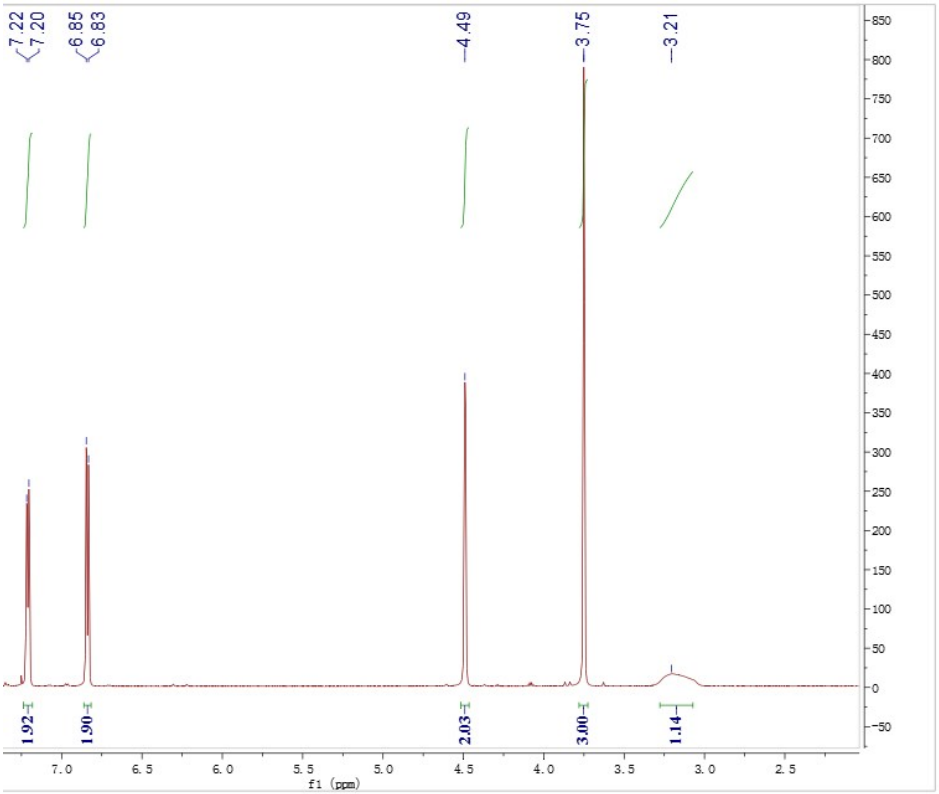
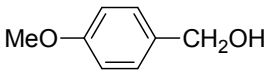


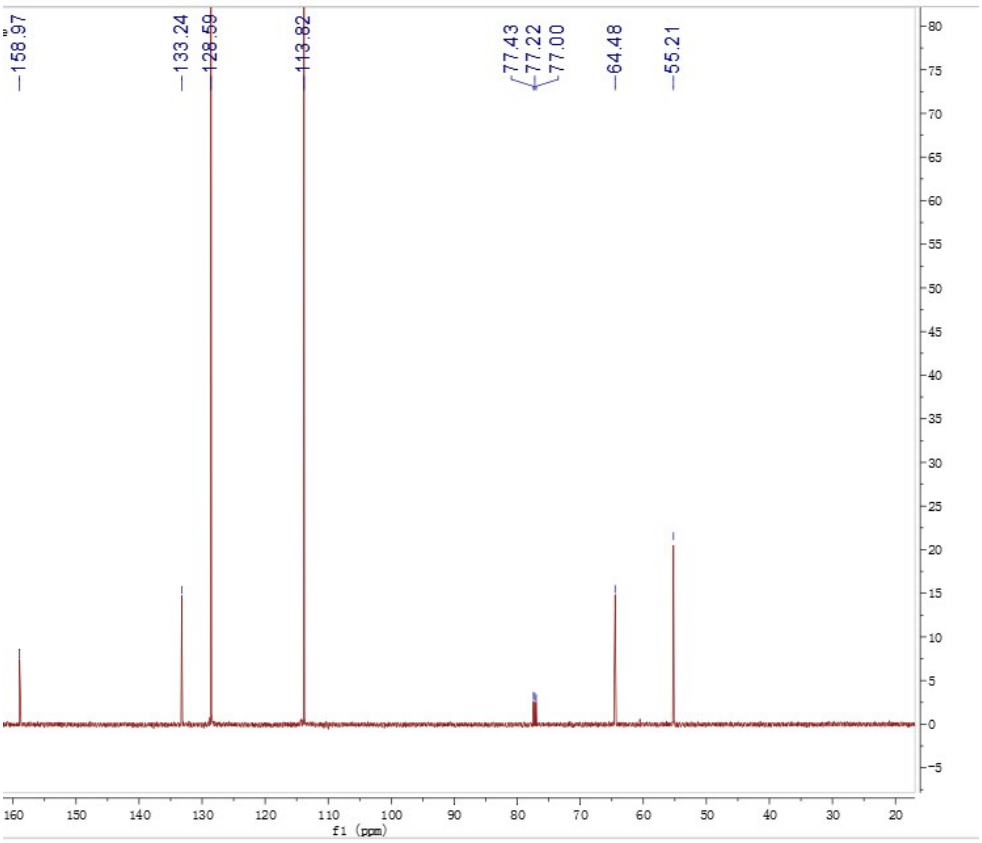
^{13}C NMR of compound 

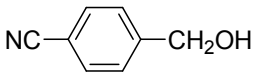


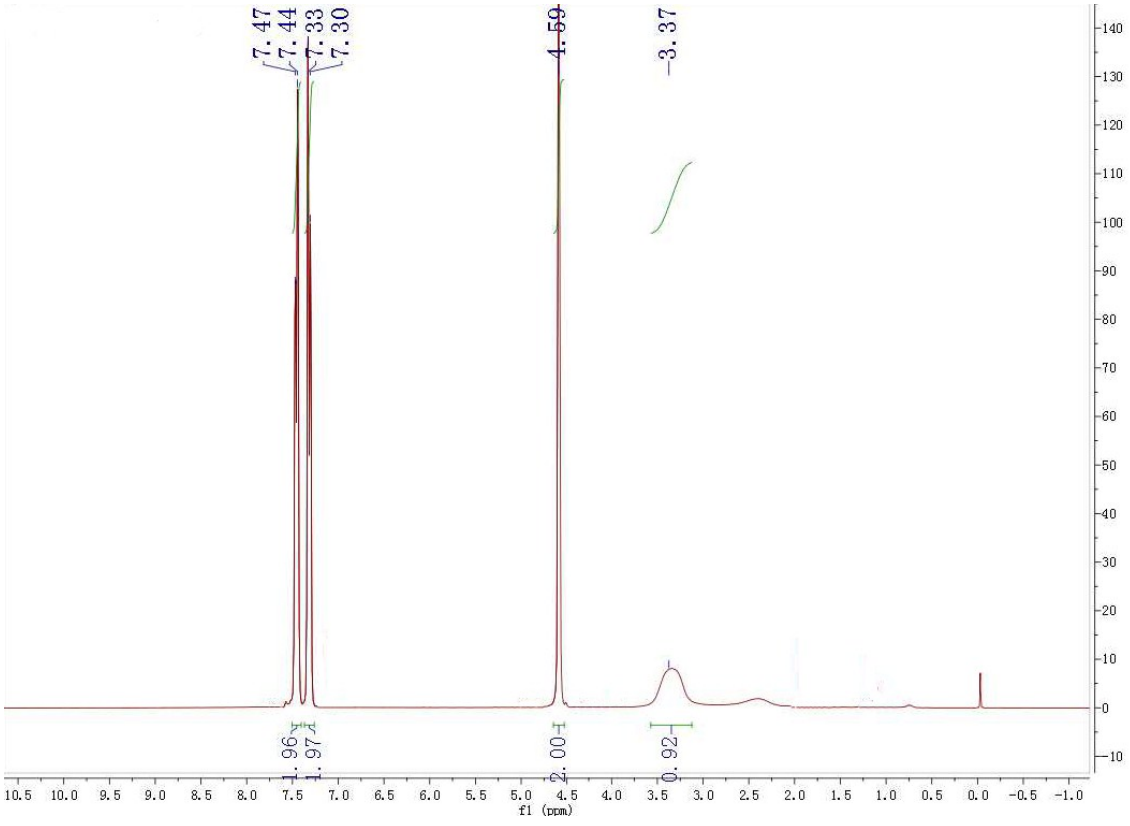
^{1}H NMR of compound 

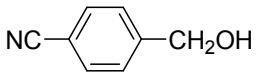


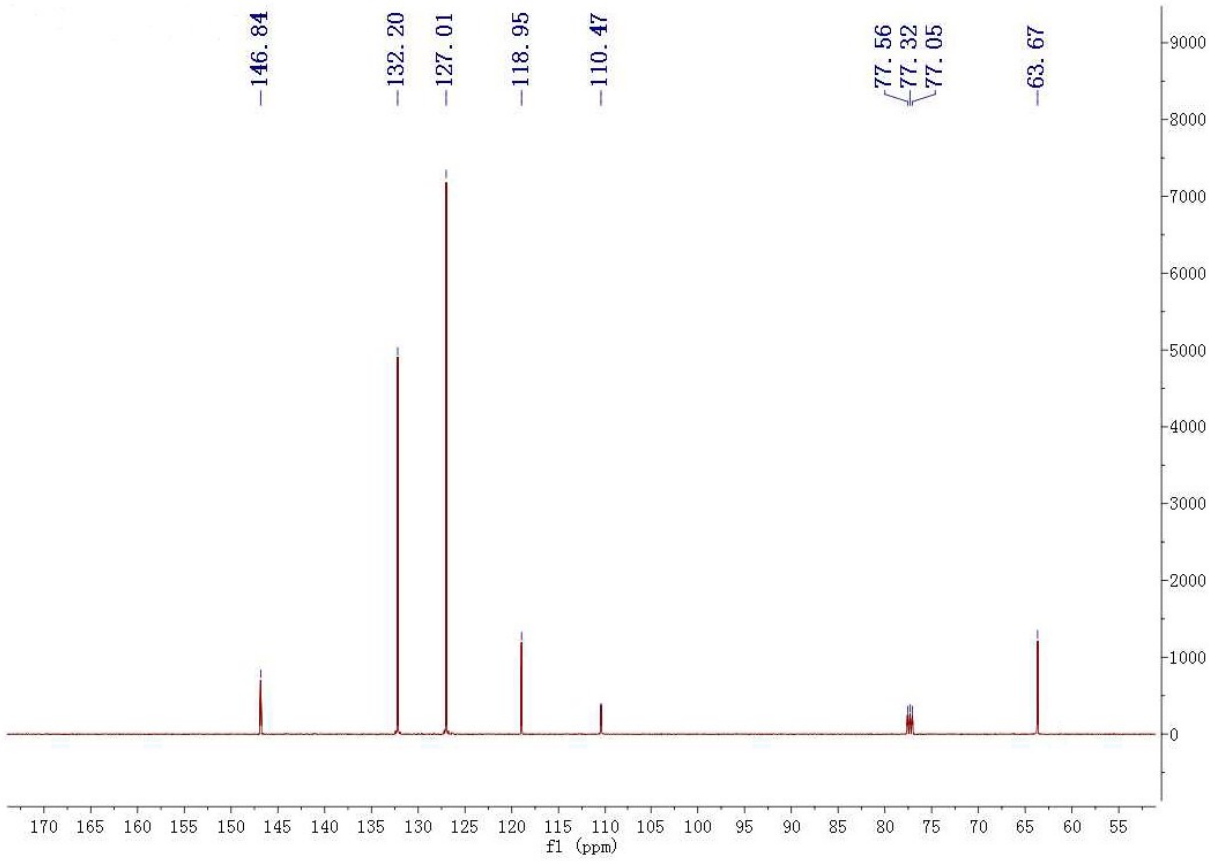
^{13}C NMR of compound 

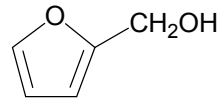


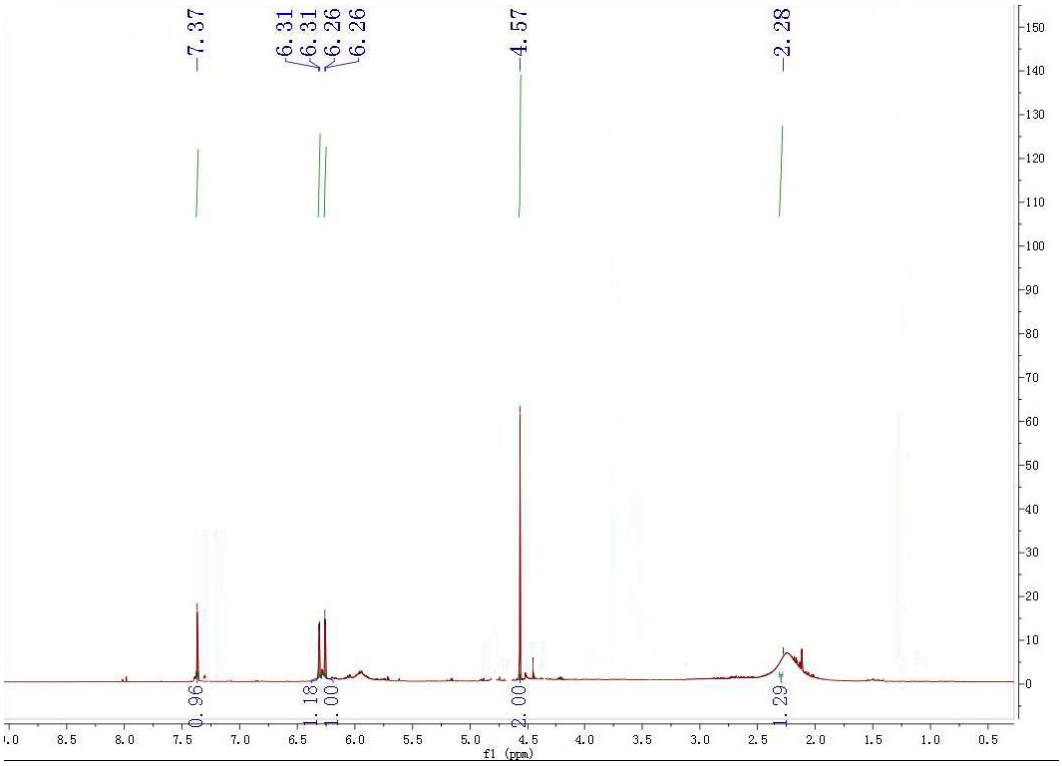
^{1}H NMR of compound 

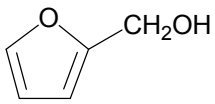


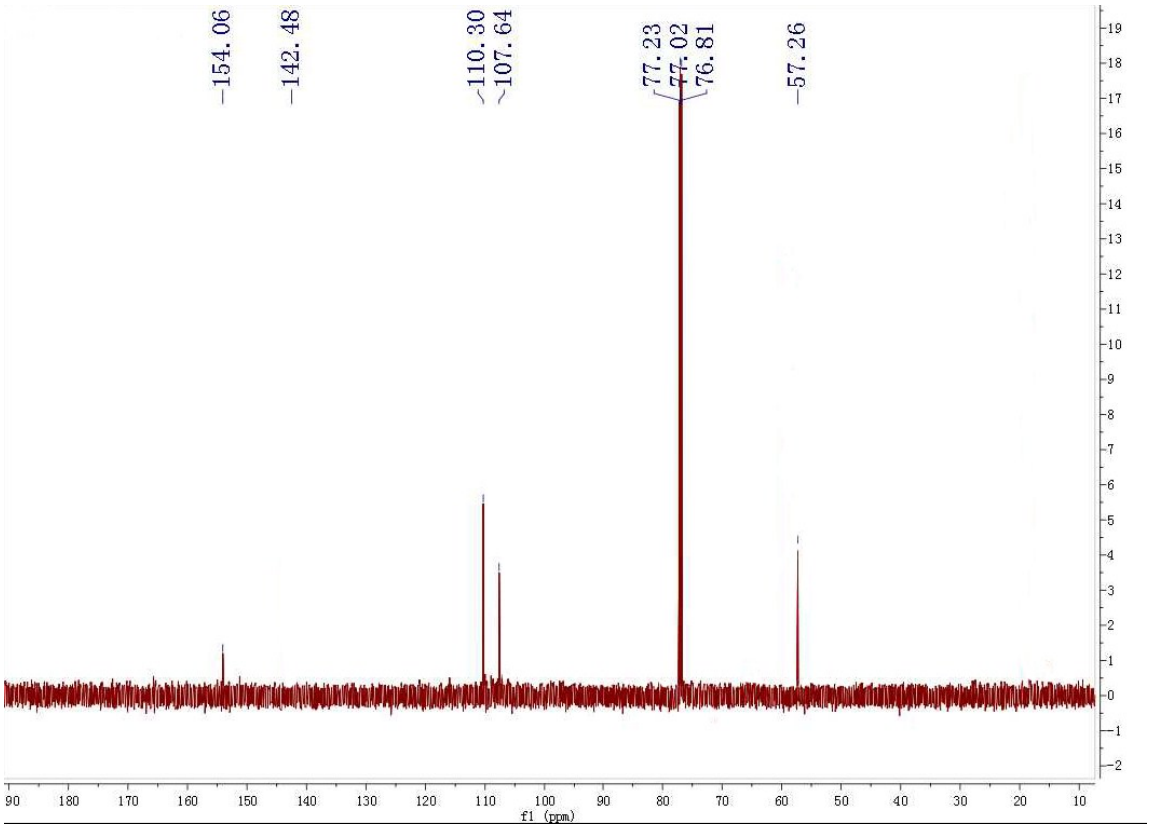
^{13}C NMR of compound 

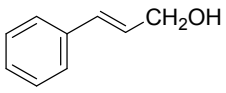


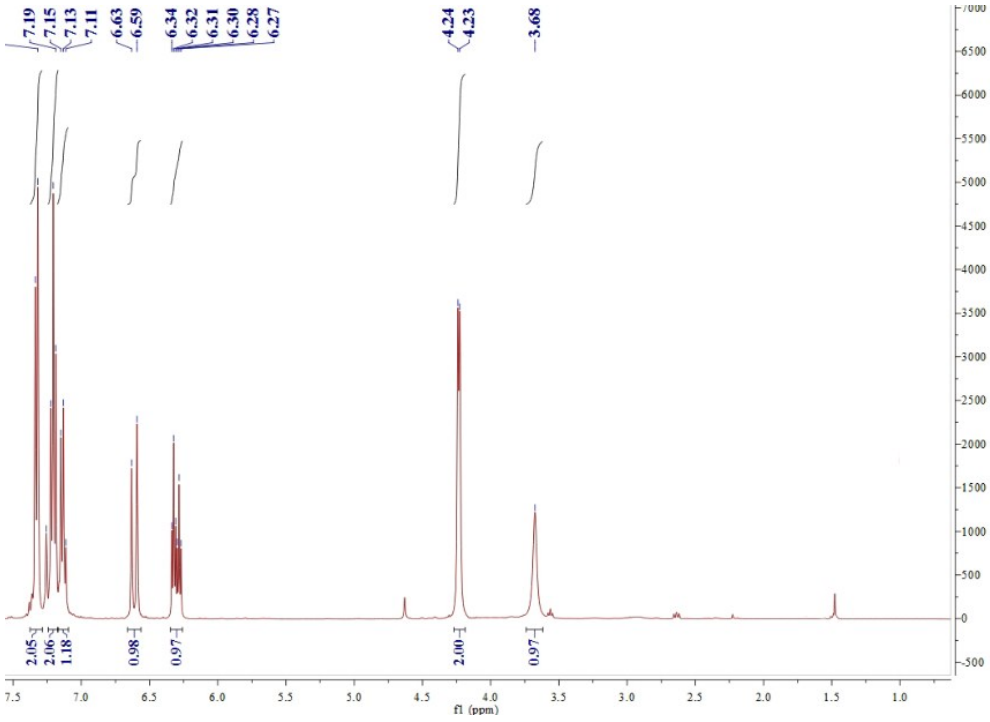
^{1}H NMR of compound 

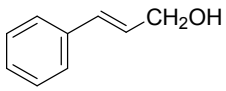


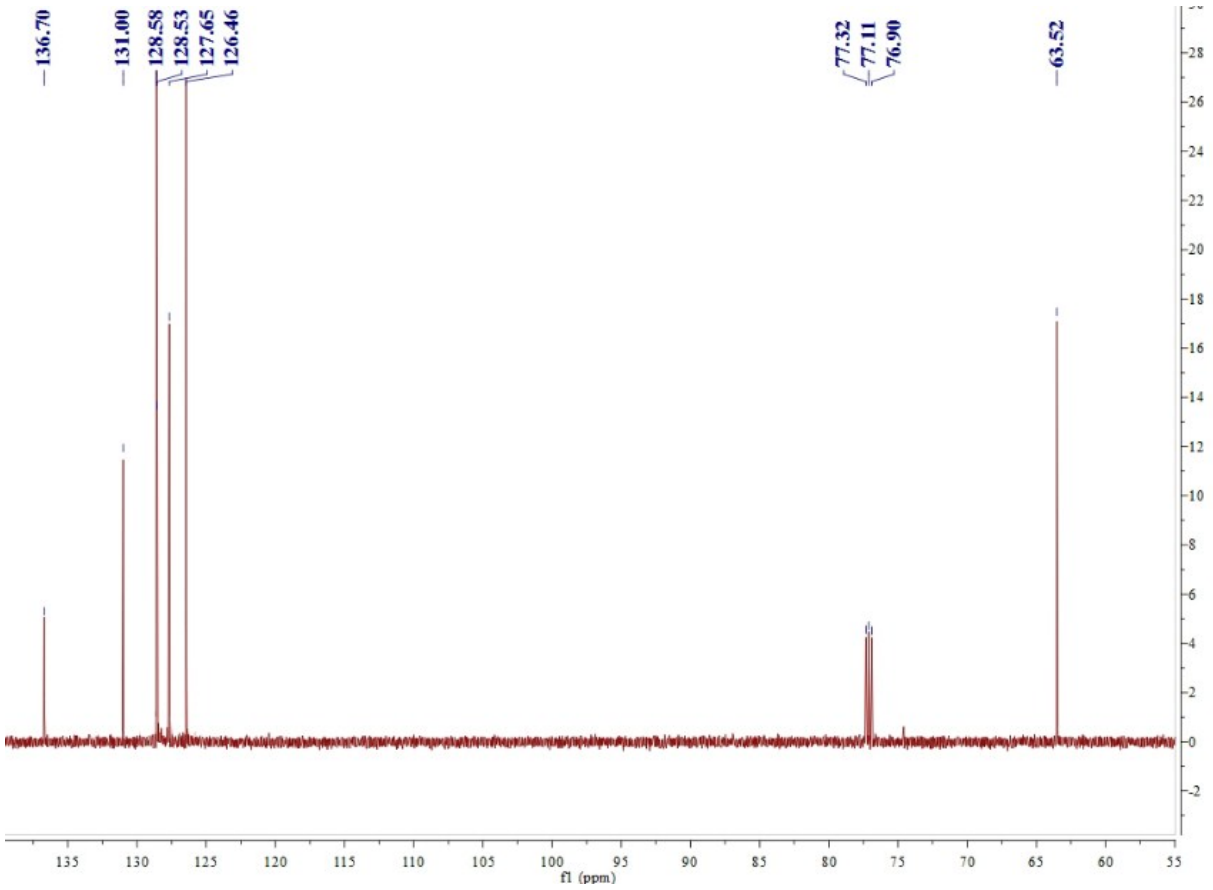
^{13}C NMR of compound 

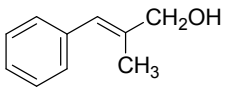


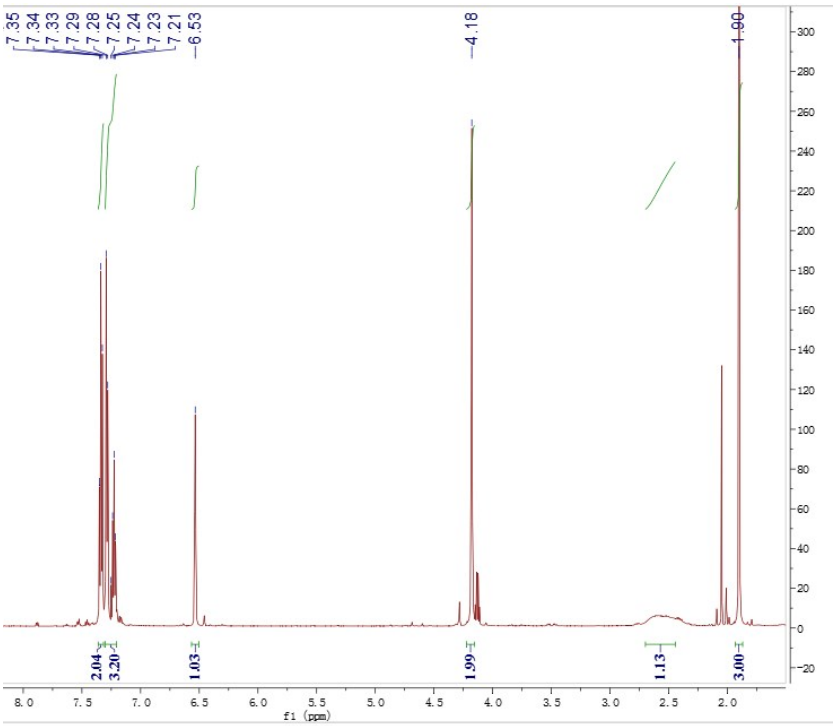
^{1}H NMR of compound 

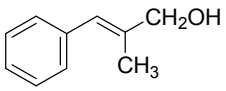


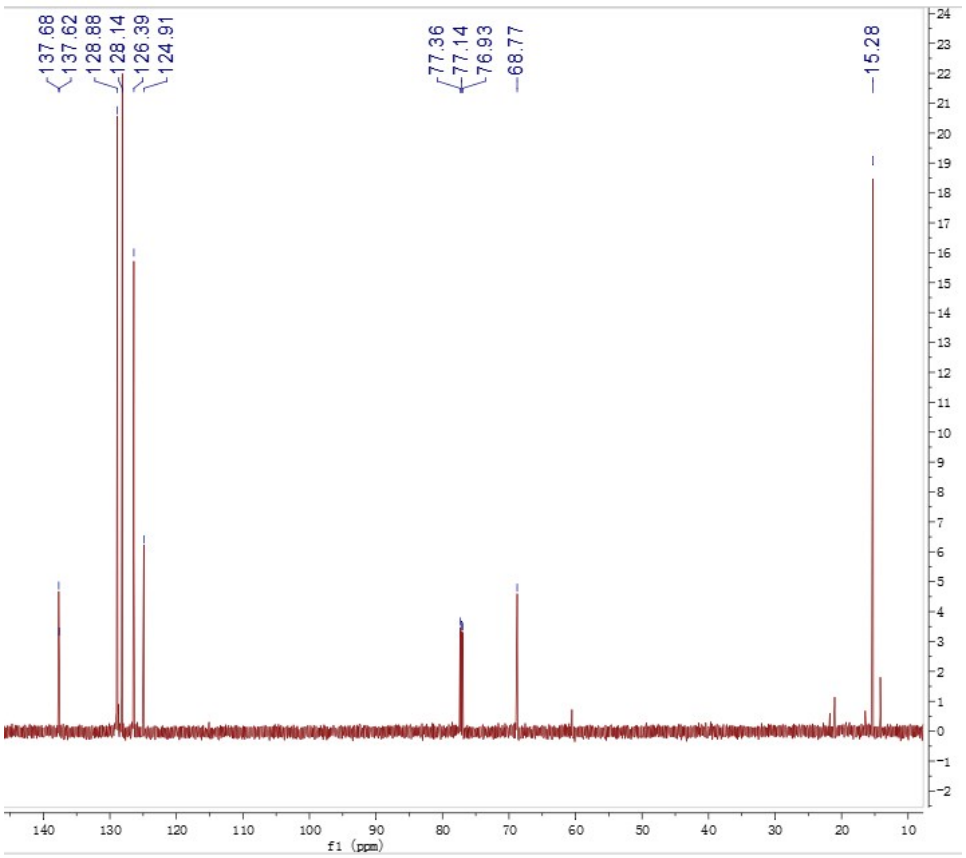
^{13}C NMR of compound 

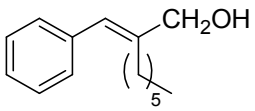


^{1}H NMR of compound 



^{13}C NMR of compound 





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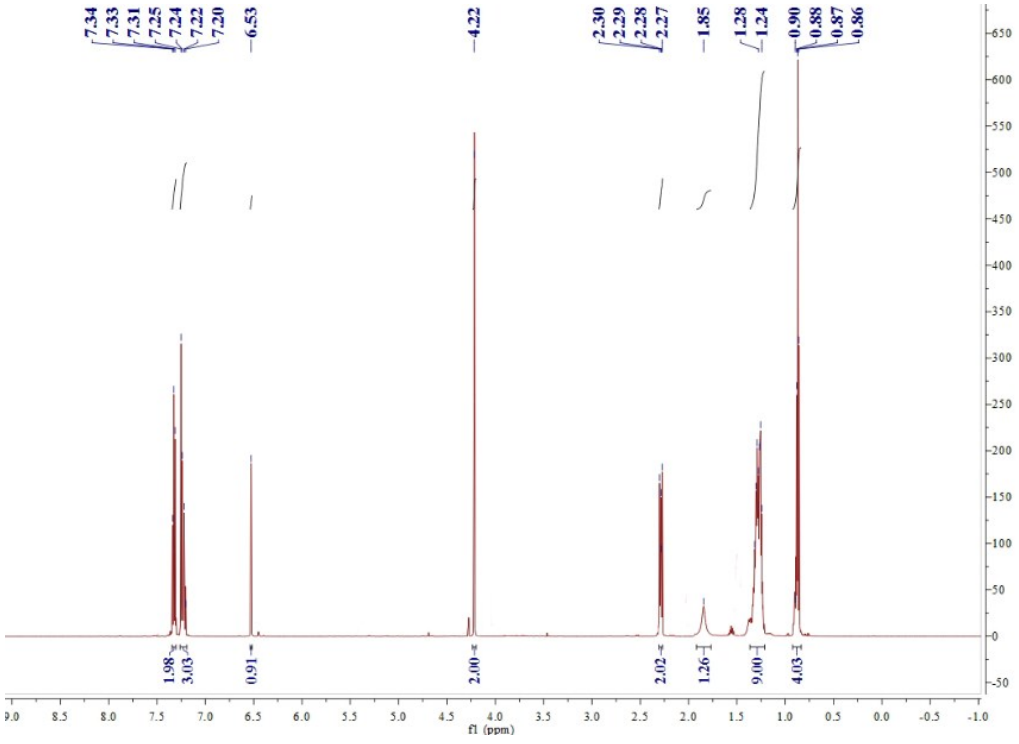

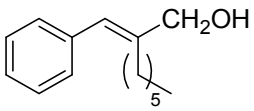

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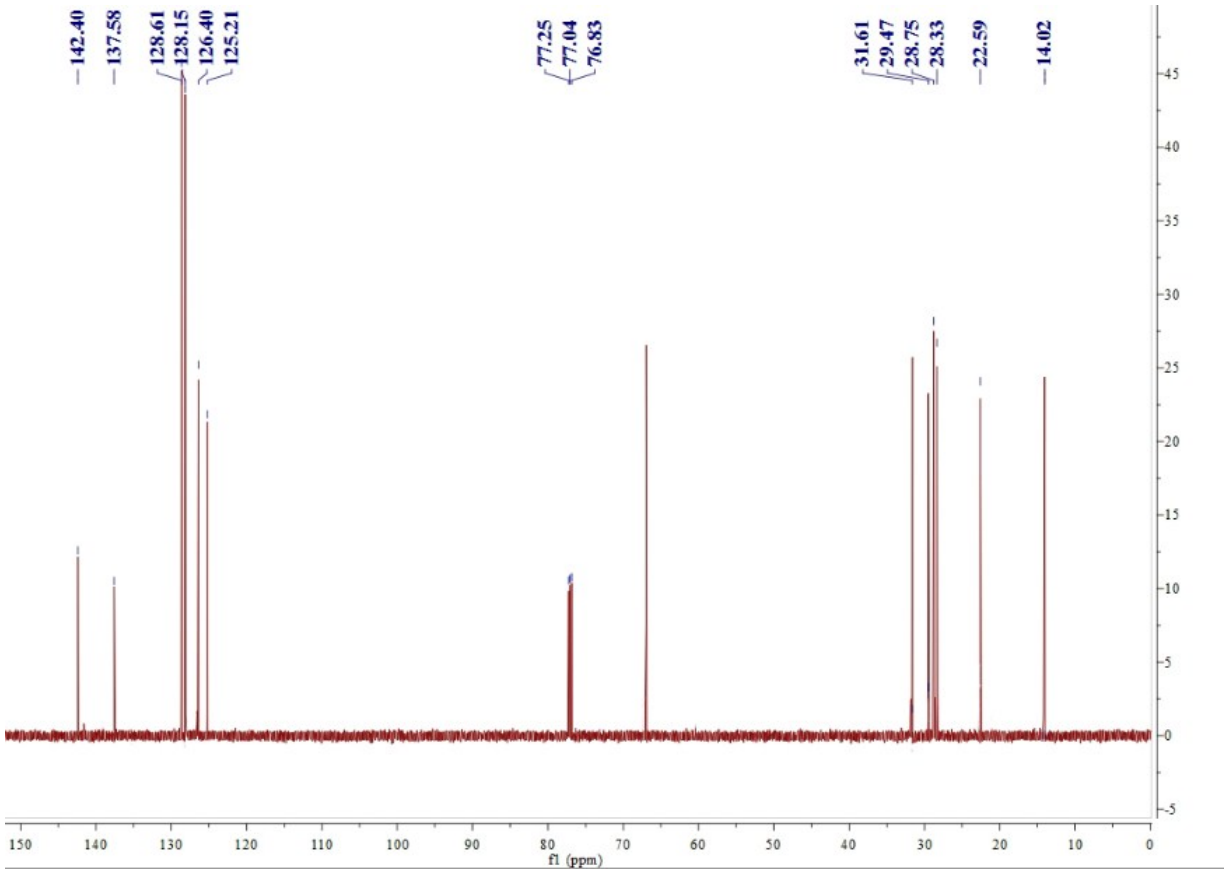

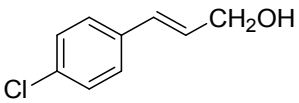

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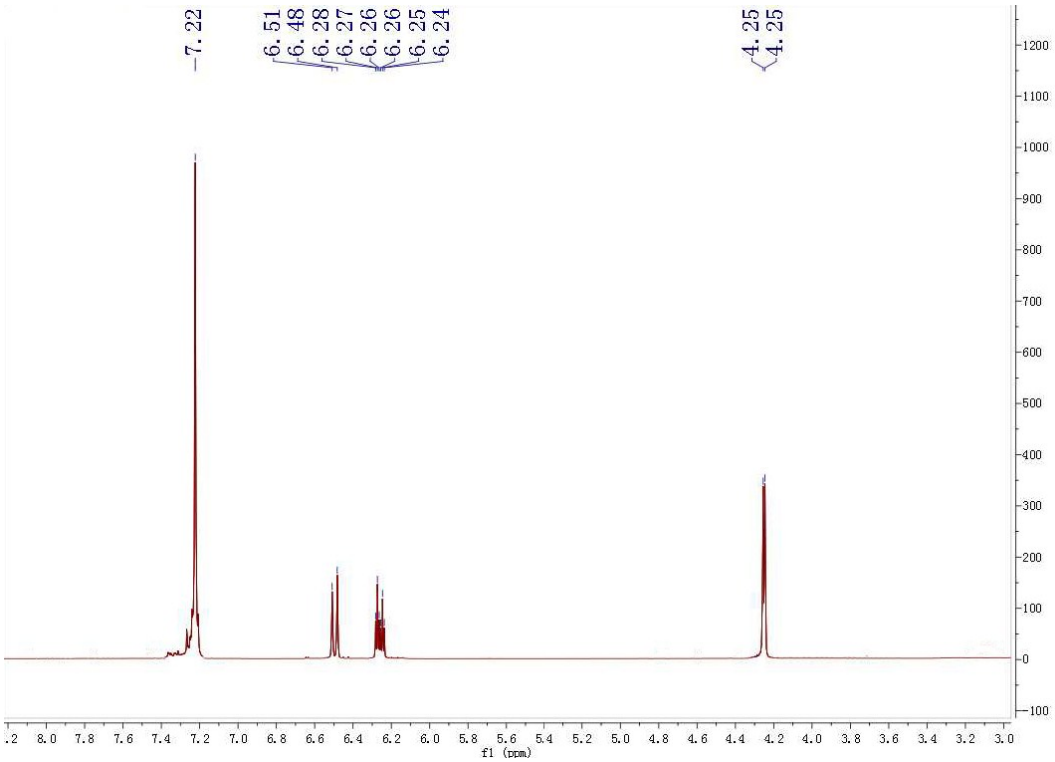
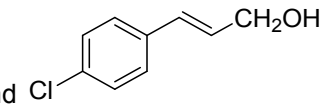
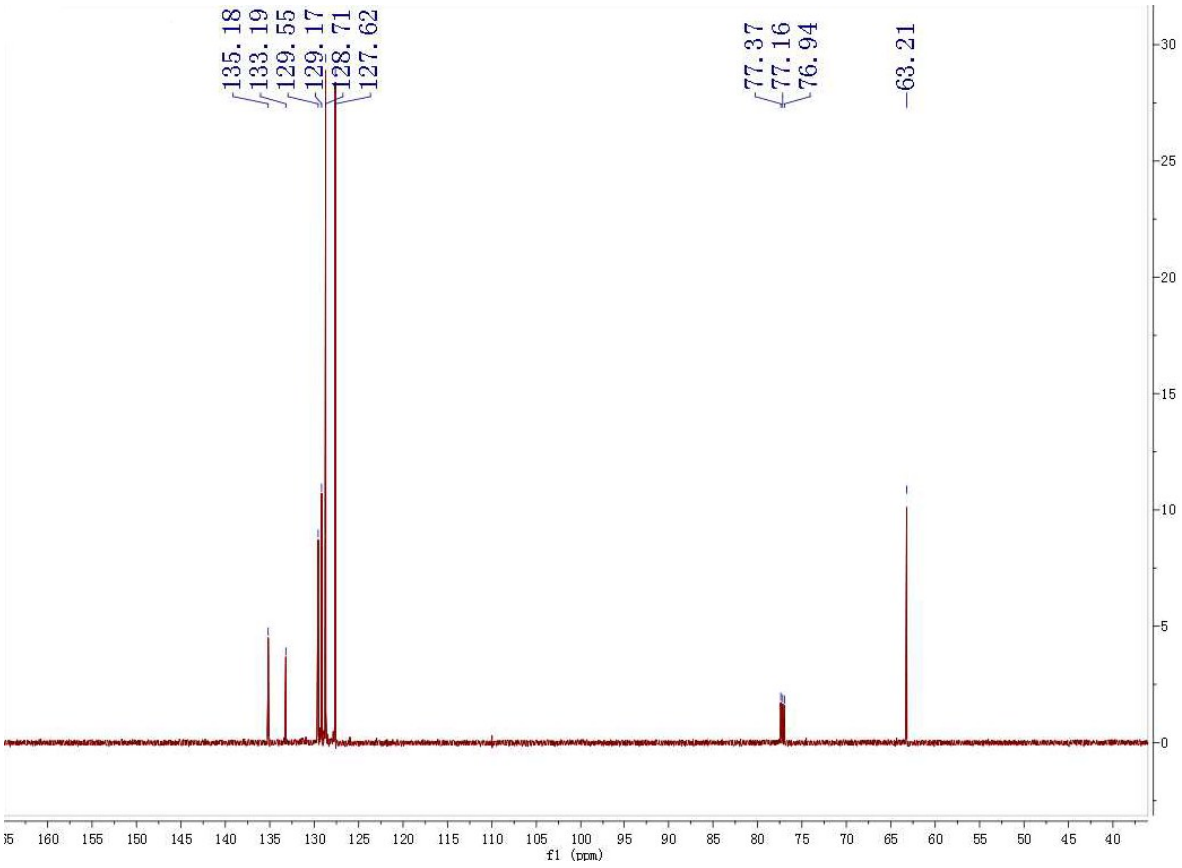
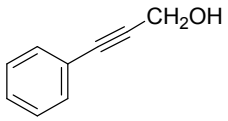
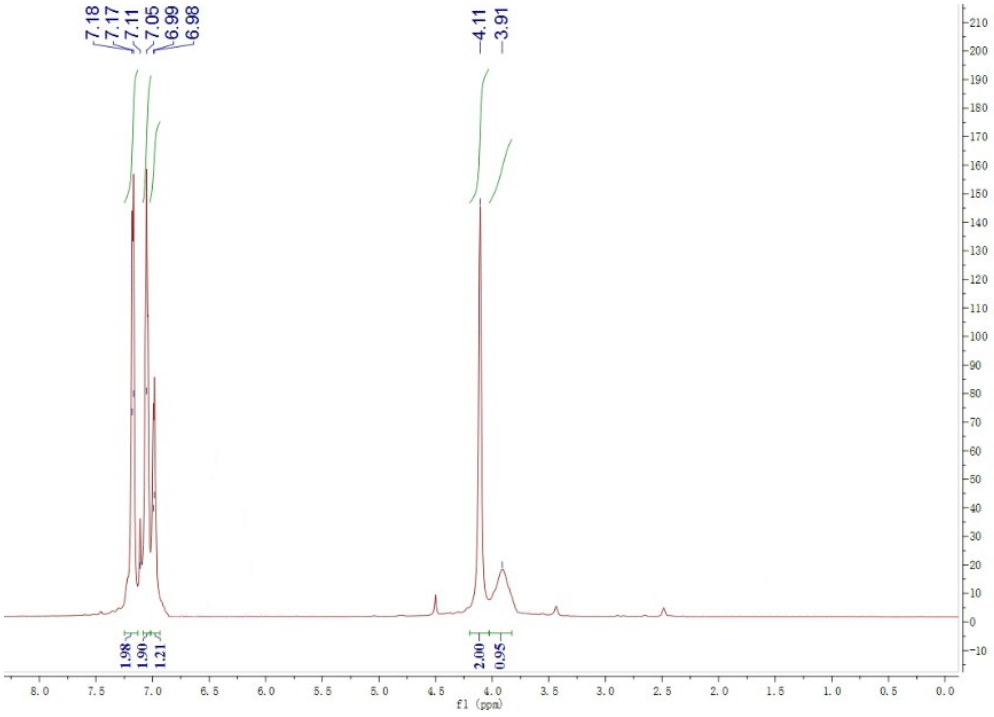
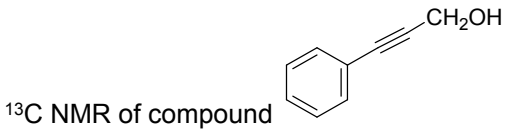


^{13}C NMR of compound 



^{1}H NMR of compound 





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