

## *Supporting Information*

# **Aza-Wacker-Type Reaction between Electron-Deficient Olefins and *N*-Alkylsulfonamides**

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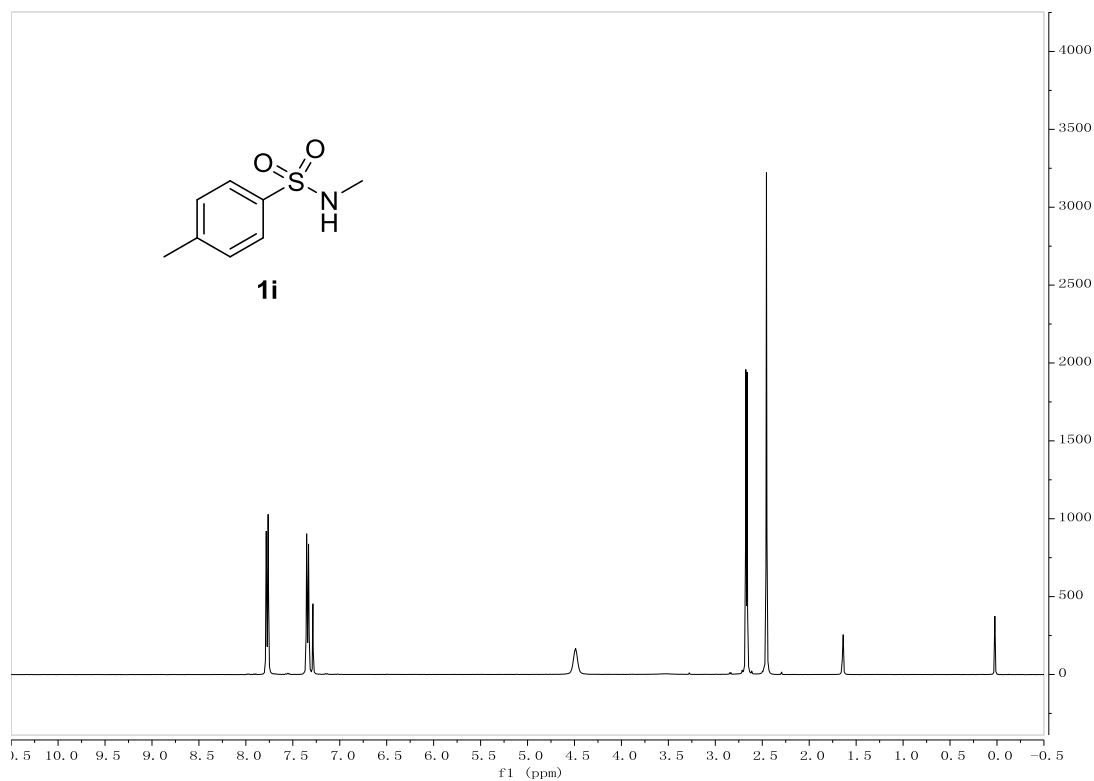
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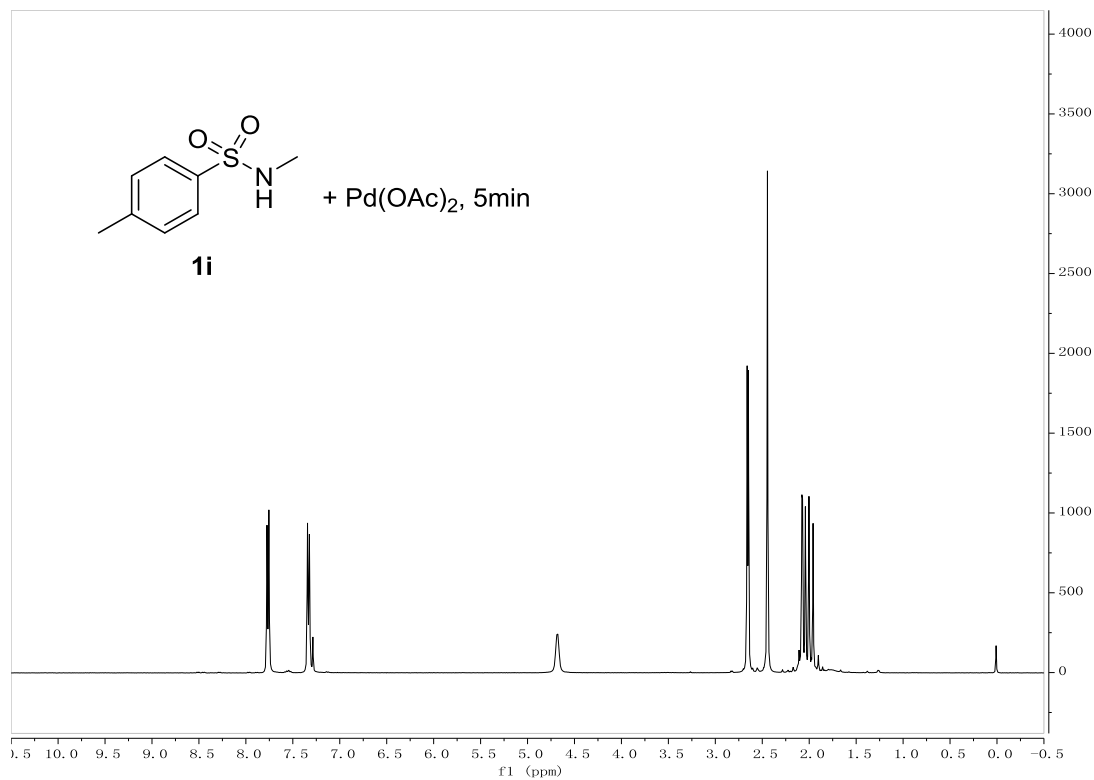
<b>Interaction between palladium and 1i</b>	<b>1</b>
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**Procedure and  $^1\text{H}$  NMR spectra for reveal the interaction between palladium with **1i**:**

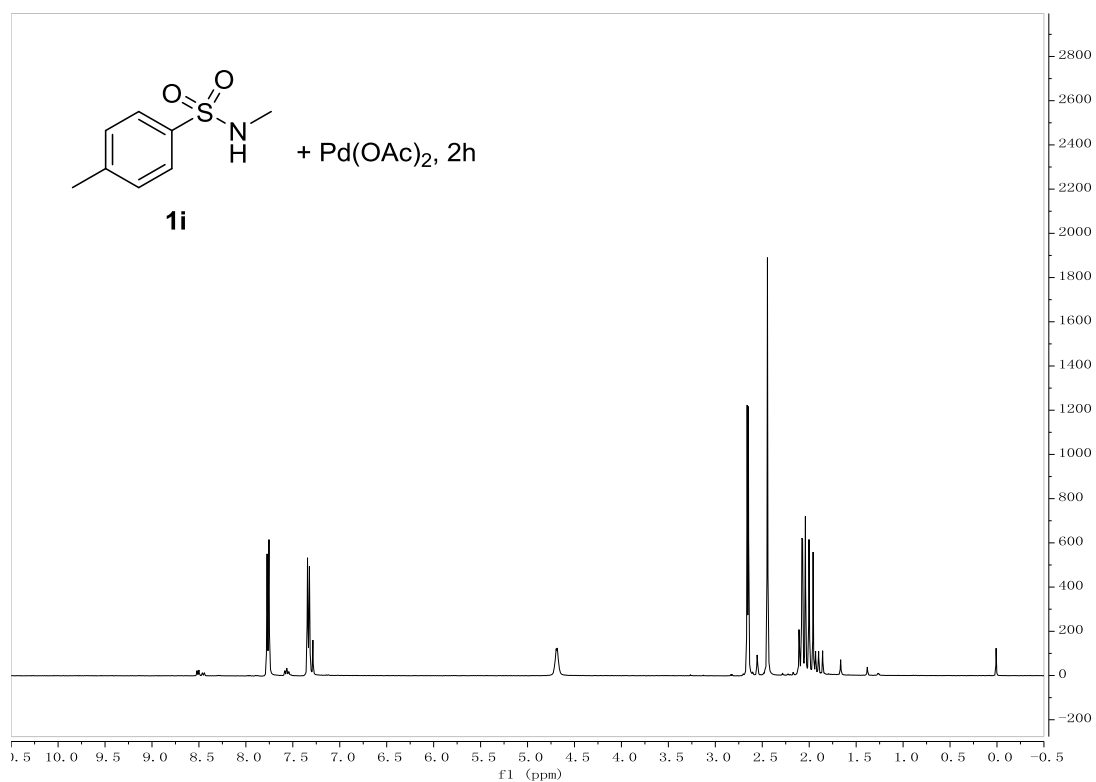
*N*,4-dimethylbenzenesulfonamide (19 mg, 0.10 mmol) was added to 0.60 mL  $\text{CDCl}_3$  in a NMR tube:



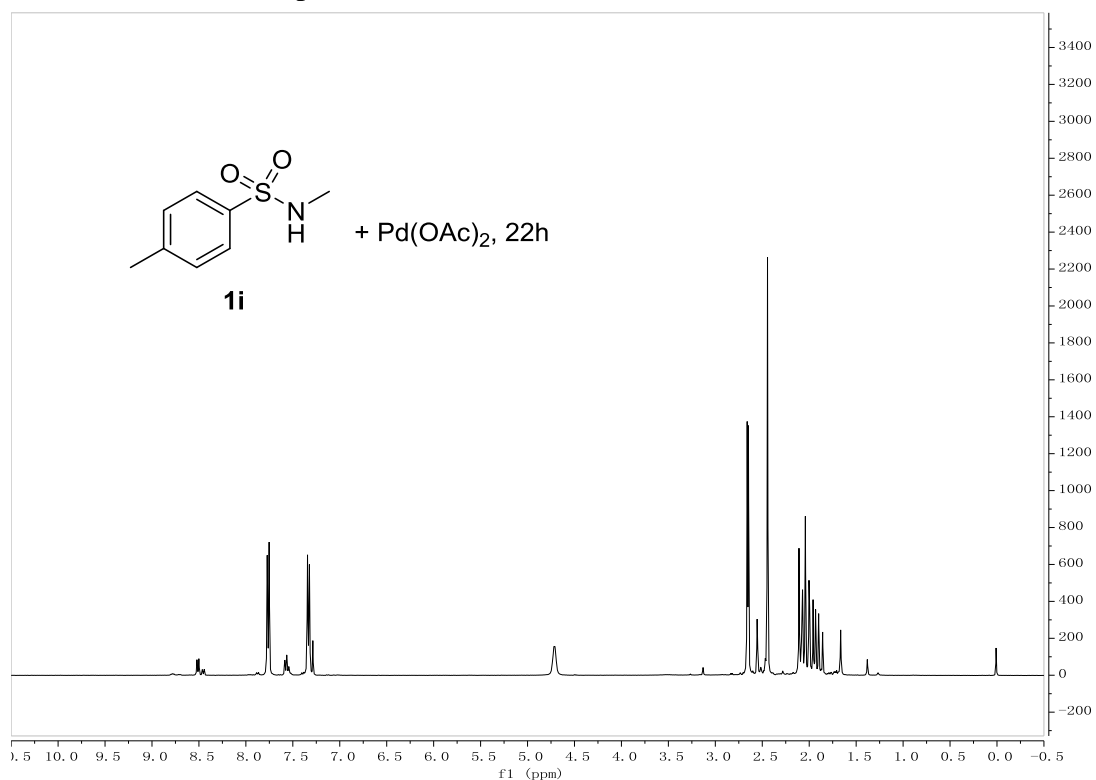
Then palladium acetate (22.4 mg, 0.10 mmol) was added to the NMR tube:



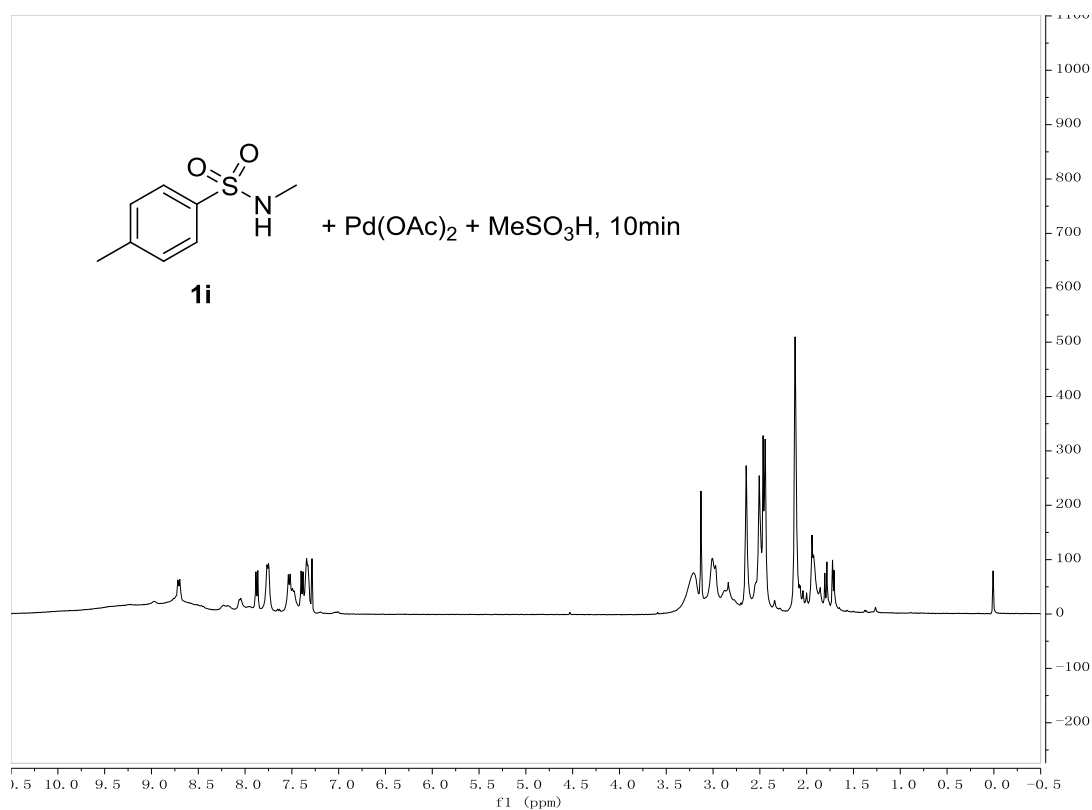
After 2h at room temperature:



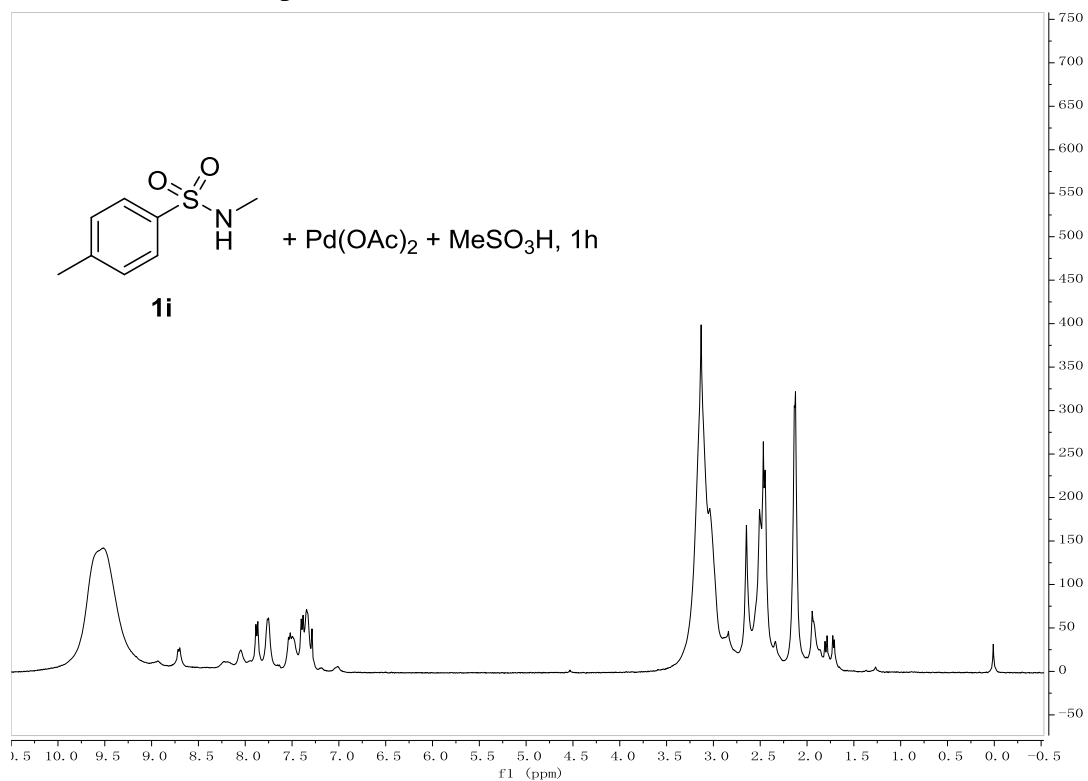
After 22h at room temperature:



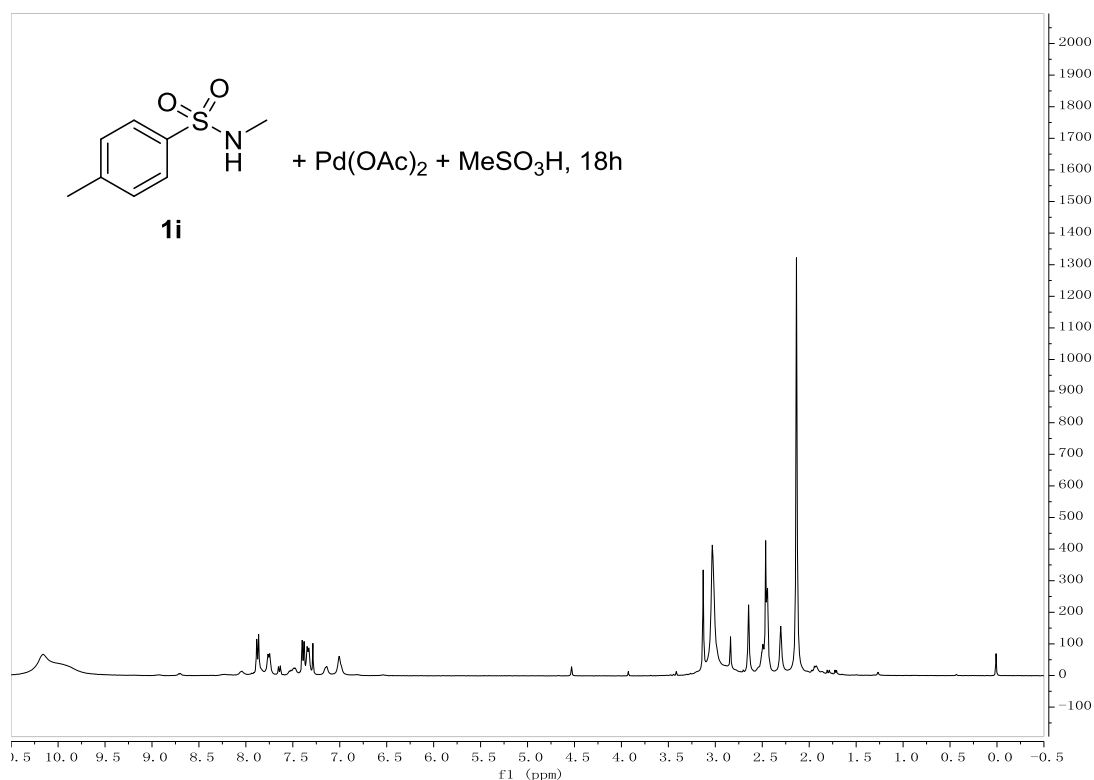
Then methanesulfonic acid (13  $\mu$ L, 0.20 mmol) was added to the NMR tube, after 10min:



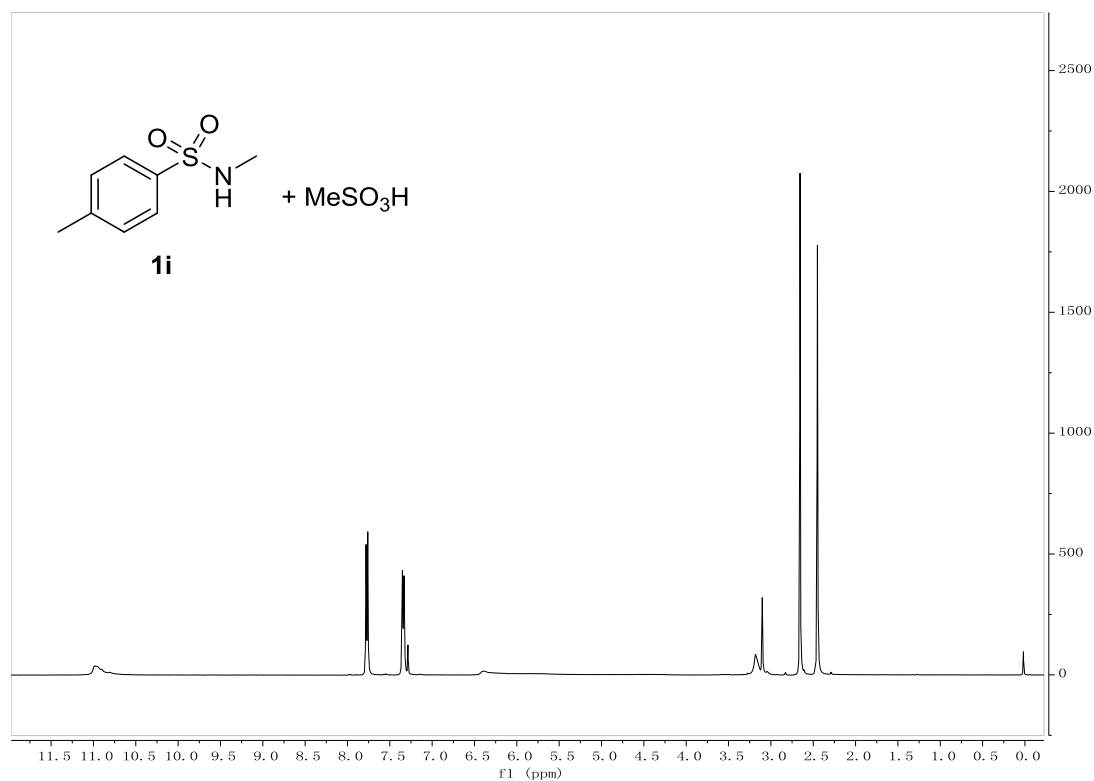
After 1h at room temperature:



After 18h at room temperature:

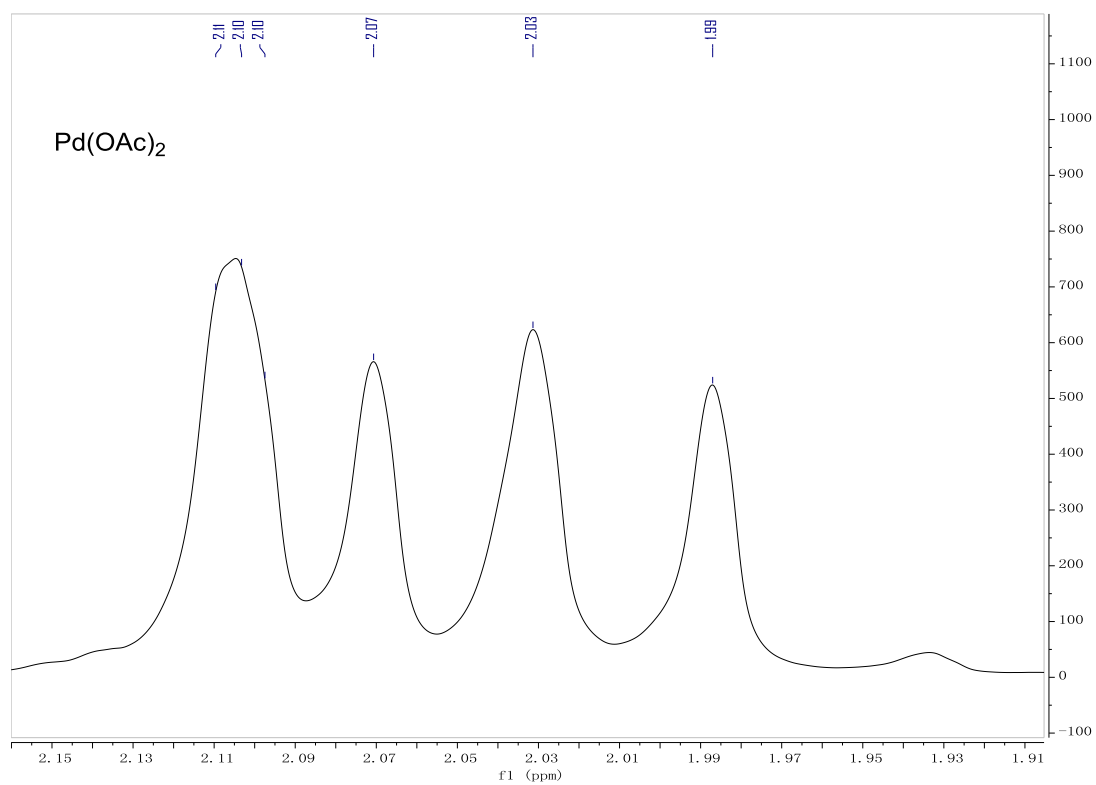
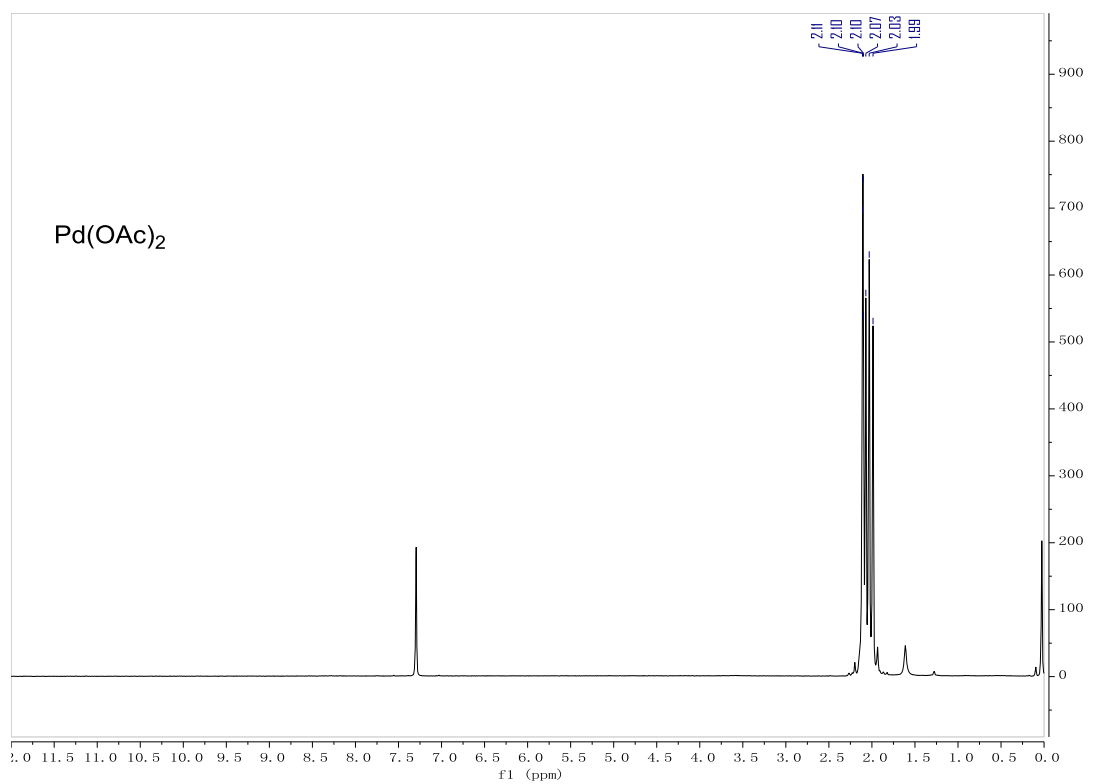


The  $^1\text{H}$  NMR spectra of **1i** (0.10 mmol) with  $\text{MeSO}_3\text{H}$  (0.20 mmol) in 0.60 mL  $\text{CDCl}_3$ :

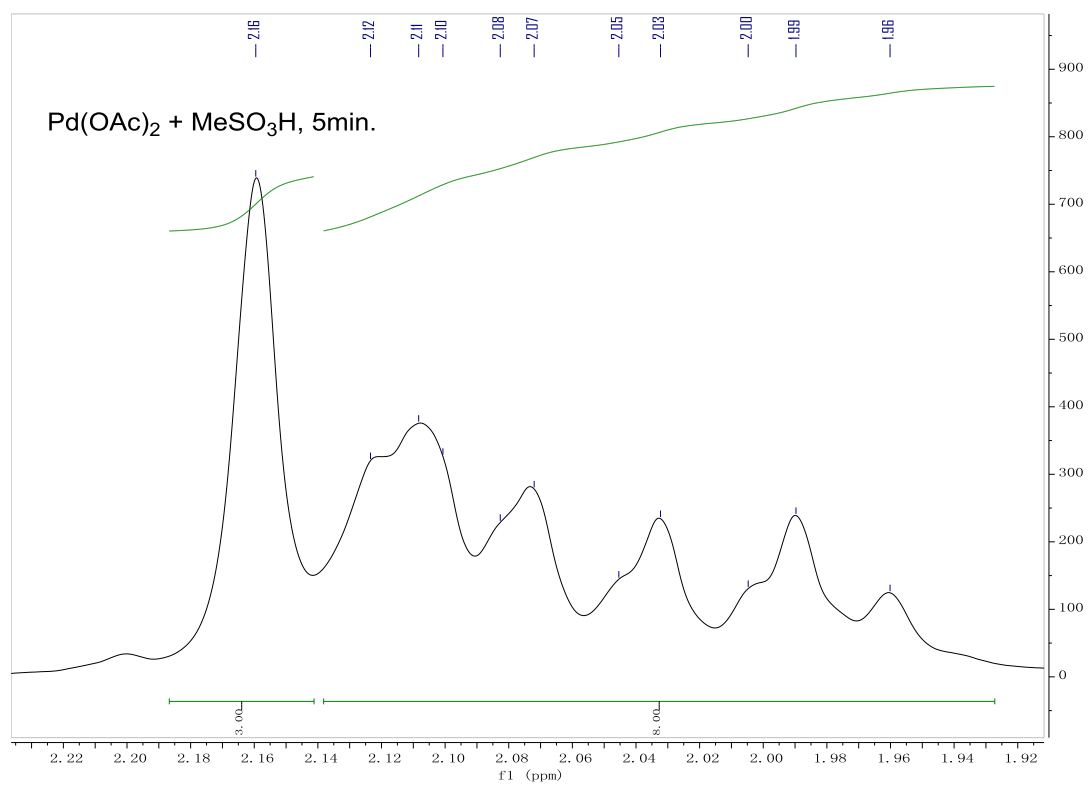
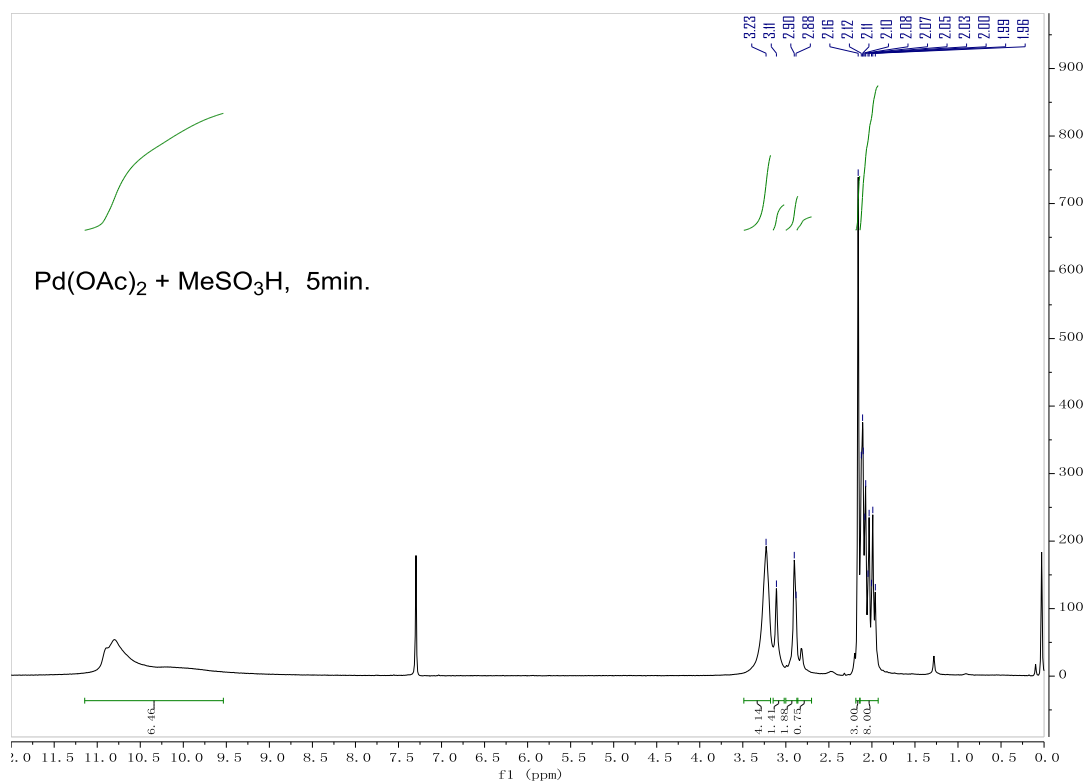


**Procedure and  $^1\text{H}$  NMR spectra for reveal the interaction between palladium acetate and  $\text{MeSO}_3\text{H}$ :**

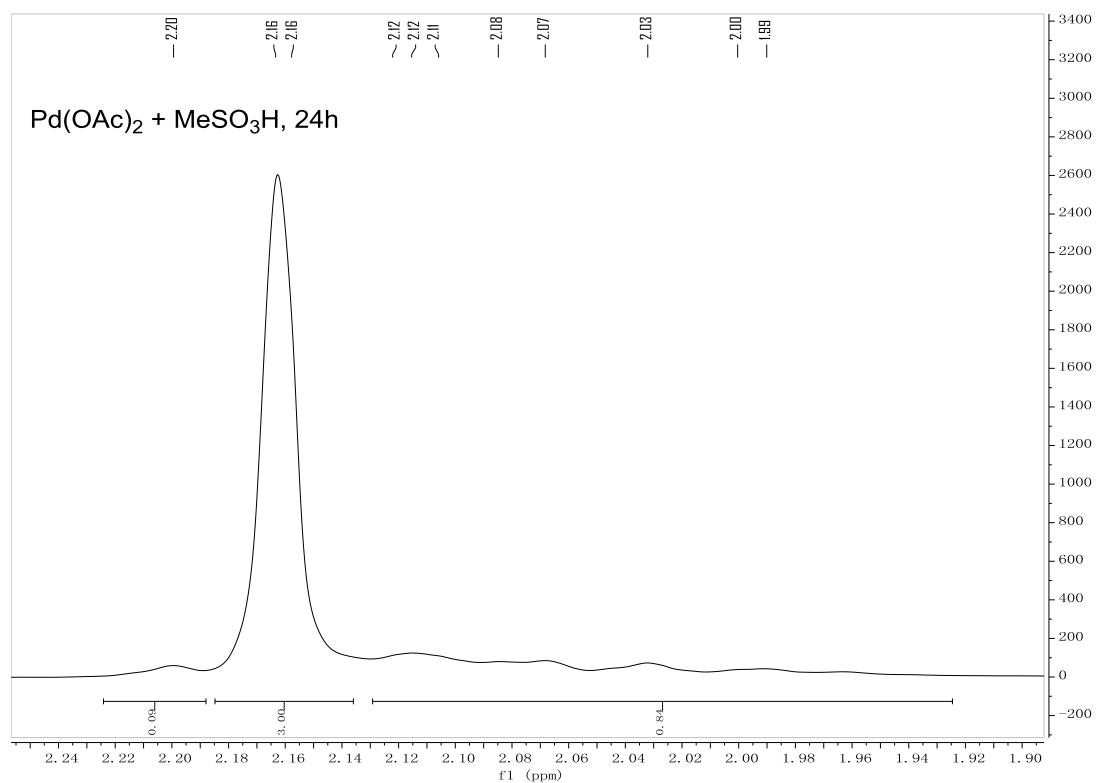
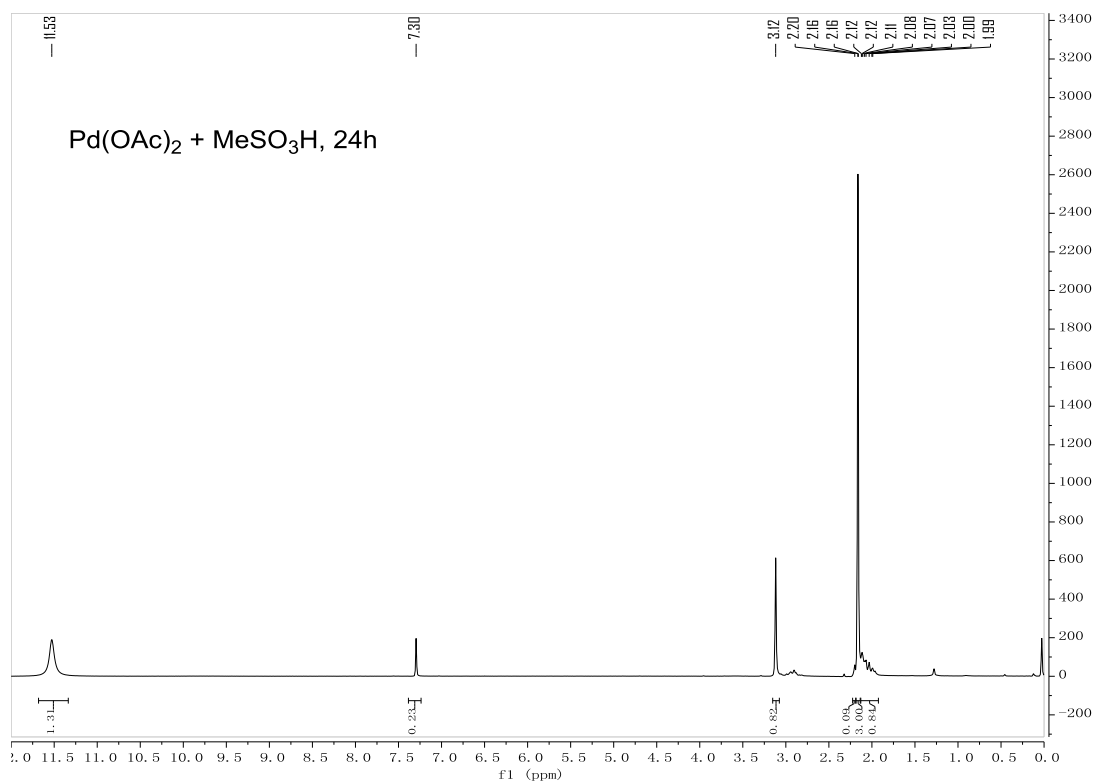
Palladium acetate (11.2 mg, 0.050 mmol) was added to 0.60 mL  $\text{CDCl}_3$  in a NMR tube:



Then 0.10 mmol  $\text{MeSO}_3\text{H}$  was added, after 5mins:



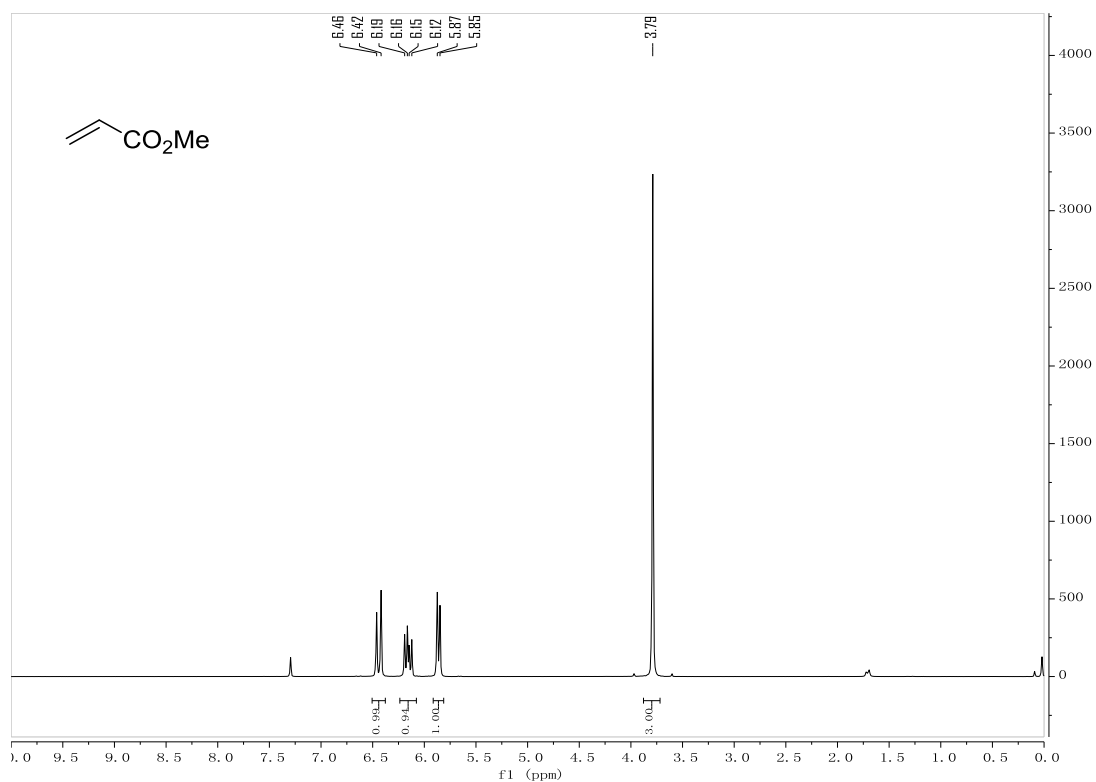
After 24h (yellow solid was precipitated):



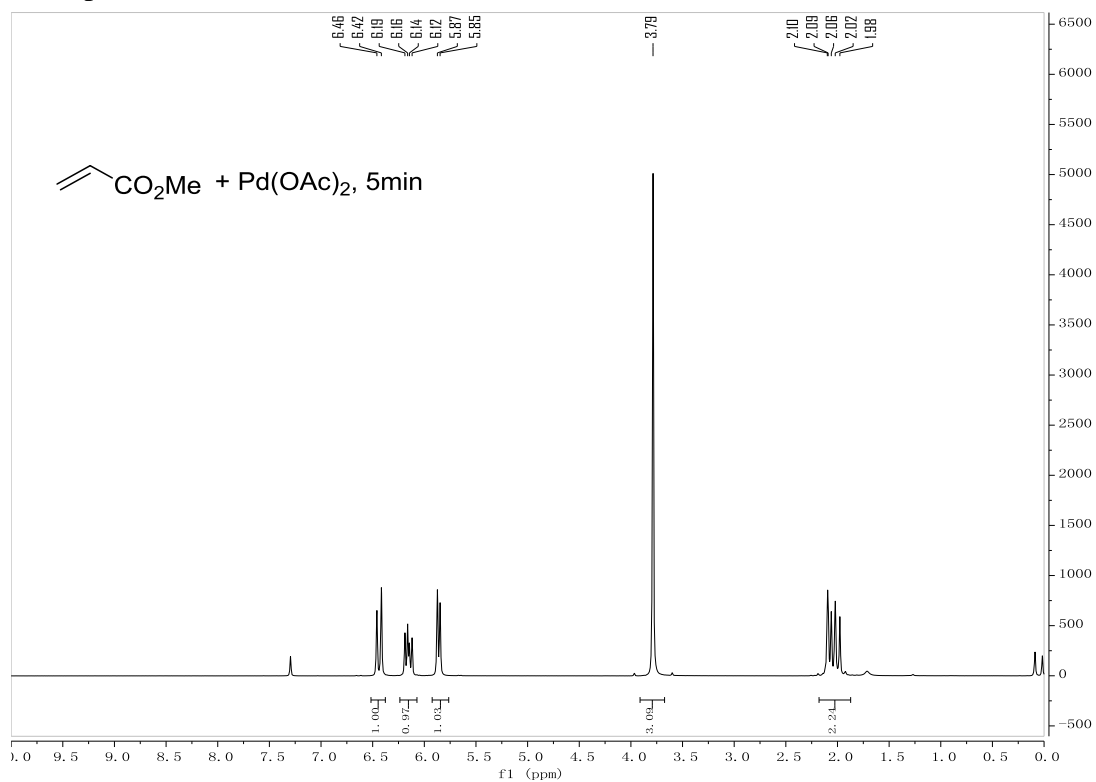
**Procedure and  $^1\text{H}$  NMR spectra for reveal the interaction between palladium acetate and methyl acrylate (2a):**

Methyl acrylate (0.10 mmol) was added to 0.60 mL  $\text{CDCl}_3$  in a NMR tube:

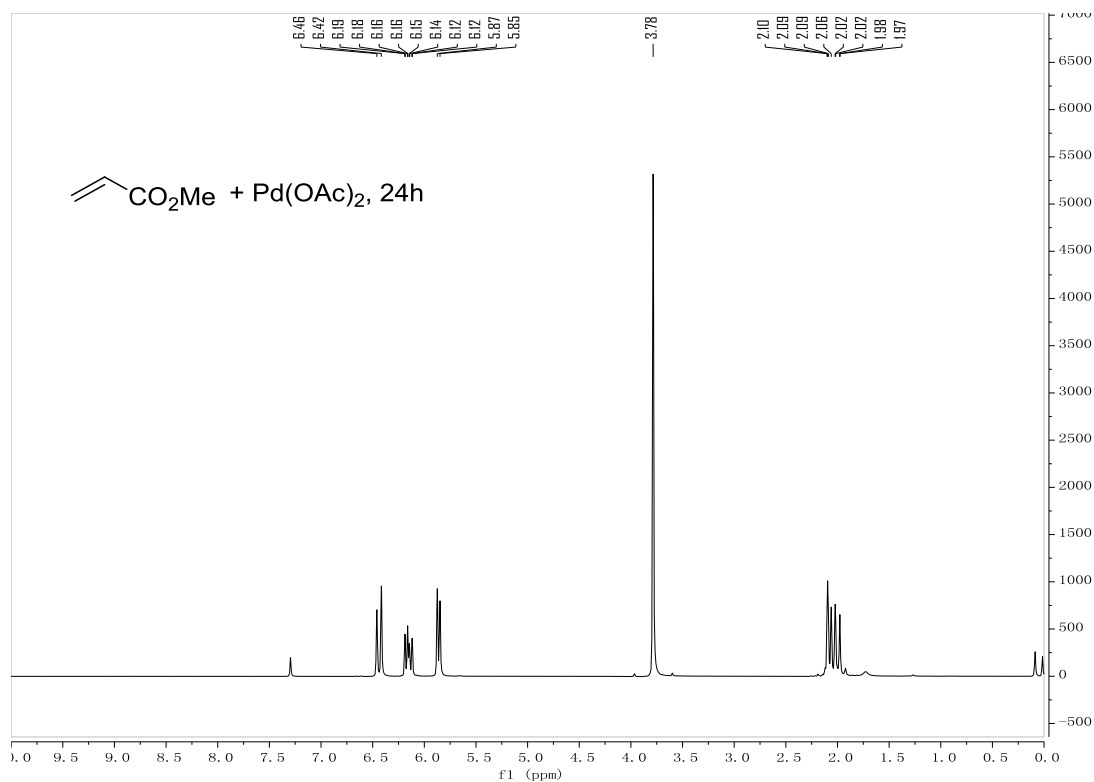




Then palladium acetate (0.050 mmol) was added, after 5min:



After 24h:



**Copies of Compounds' NMR spectra and ORTEP:**

