A New Four-Component Reaction Involving Michael Addition and Gewald Reaction, Leading to Diverse Biologically Active 2-Aminothiophenes

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1. General method for the preparation of amine salts

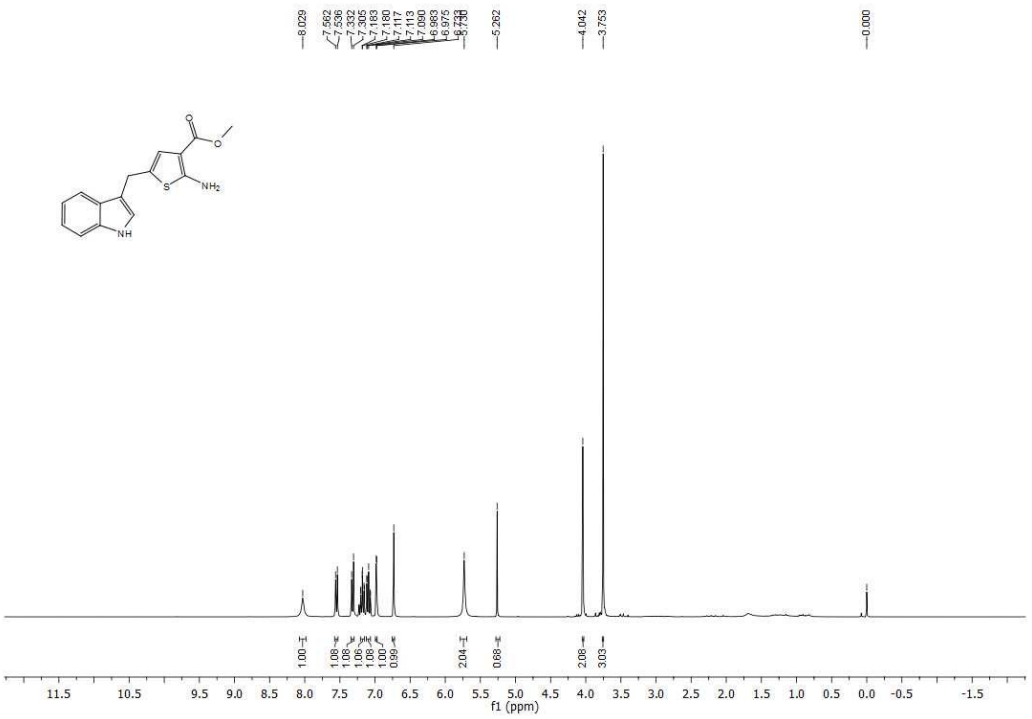
To a solution of amine (10 mmol) in diethyl ether (20 mL), a solution of the corresponding acid (11 mmol) in diethyl ether/n-pentane (10 mL) was added slowly at 0 ^{o}C. After 1 hour, the reaction was allowed to warm up to room temperature and the white precipitate was filtered under argon and washed with diethyl ether and pentane to afford the clean amine salt.[1]

2. Reference

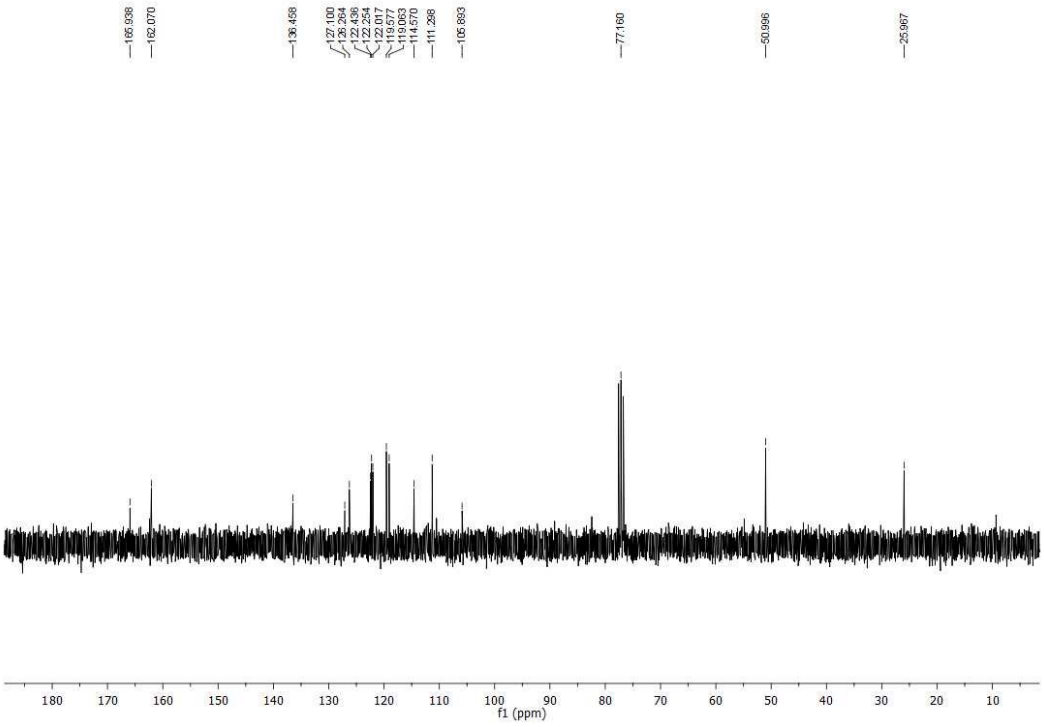
(1) Xiang, S-K.; Zhang, B.; Zhang, L-H.; Cui, Y.; Jiao, N. *Chem.Commun.* **2011**, *47*, 8097.

3. Copies of 1H-NMR and 13C-NMR spectra

^{1}H NMR spectra of **4a**:



^{13}C NMR spectra of **4a:**



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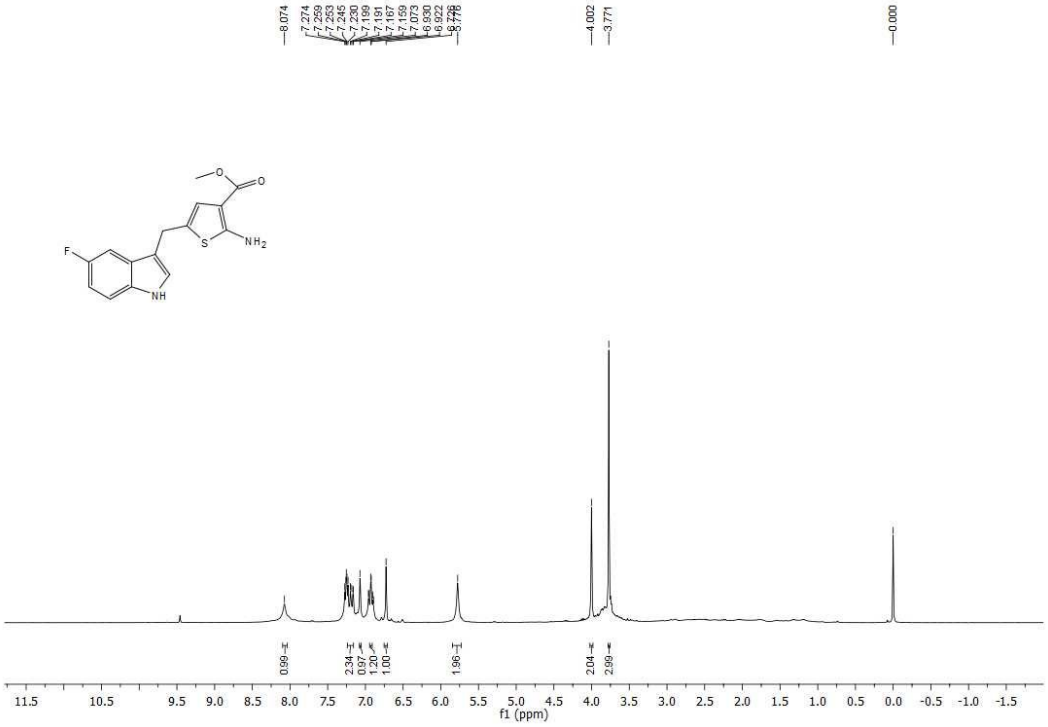
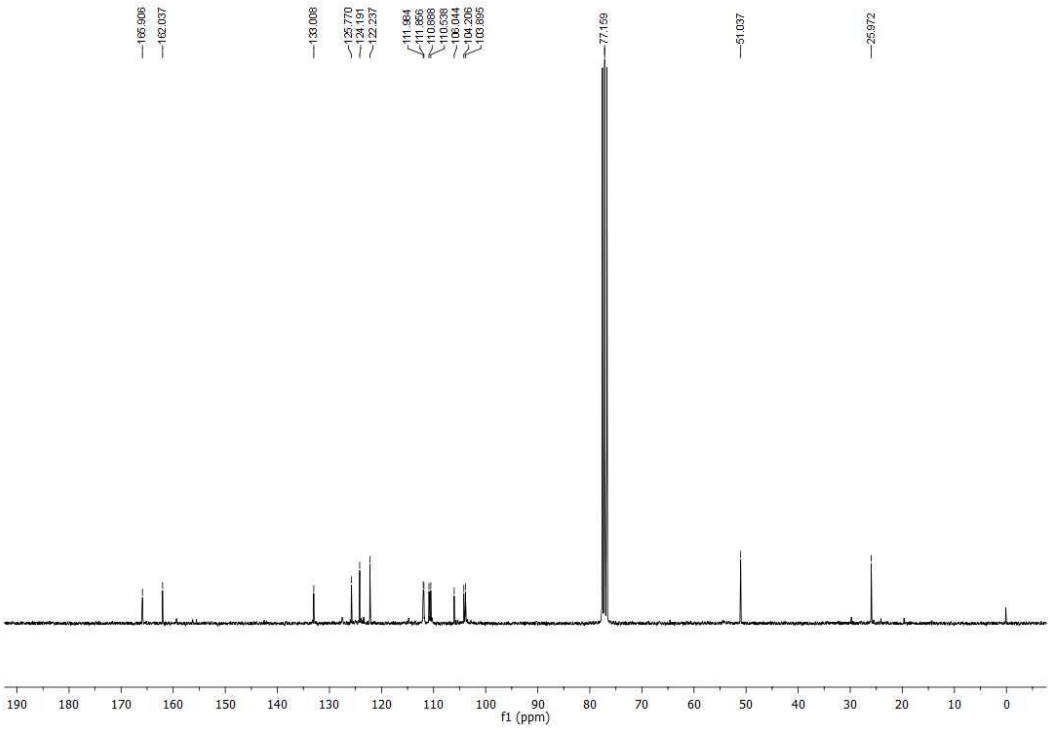
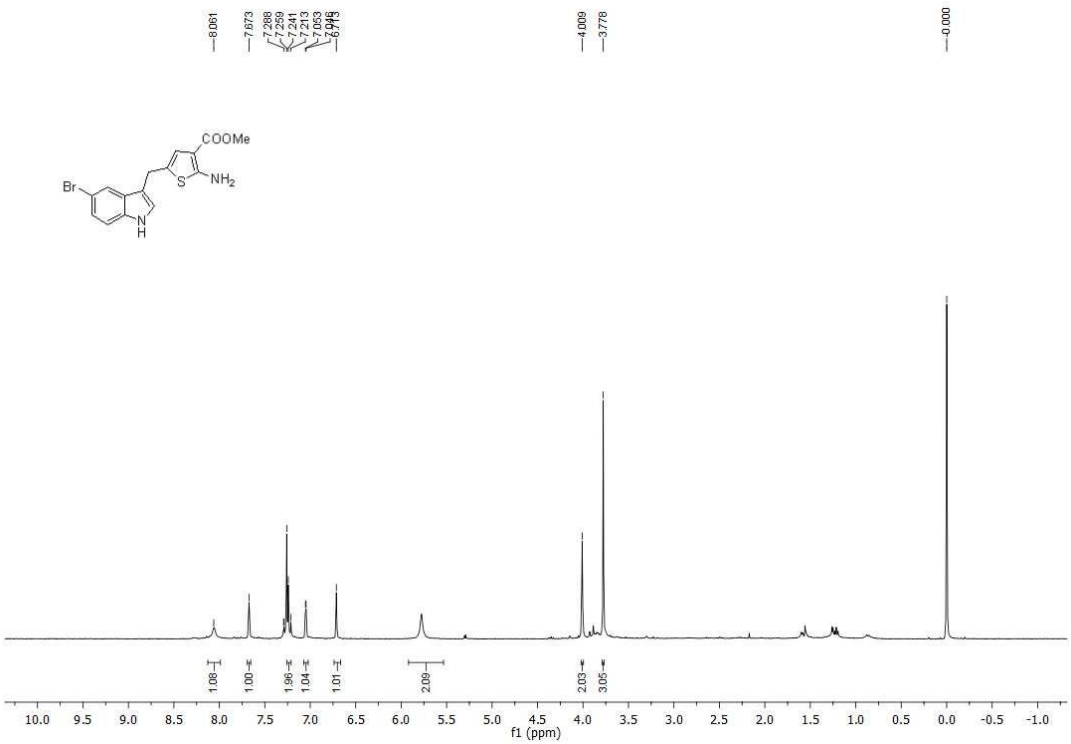


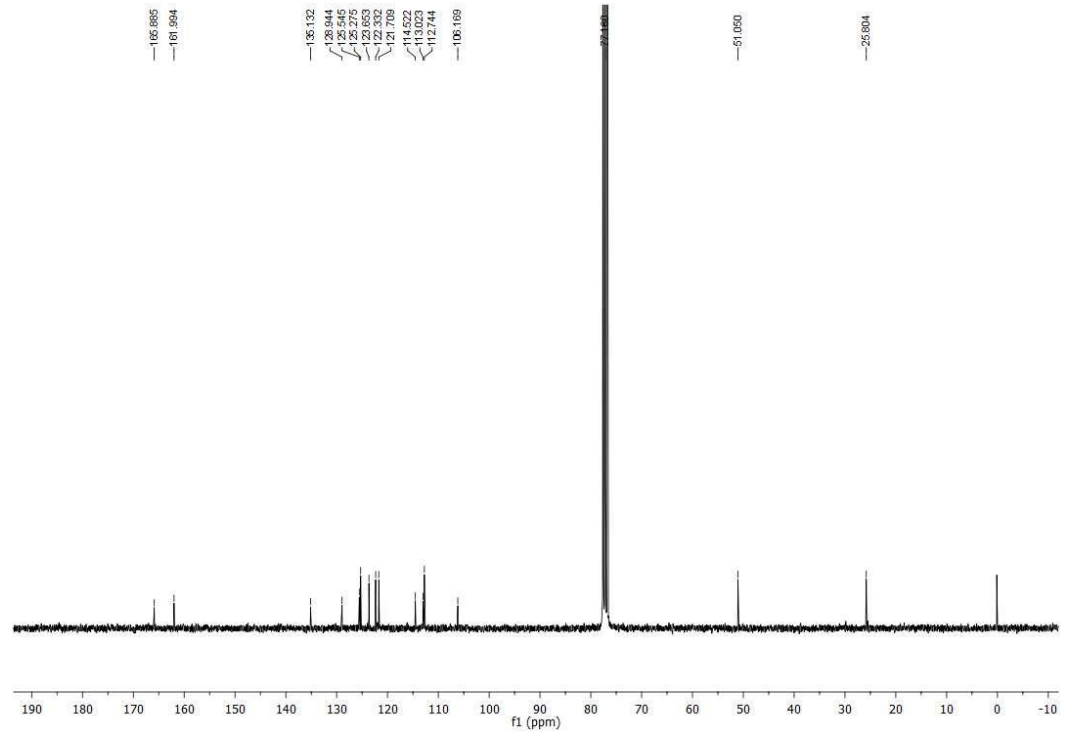
^{13}C NMR spectra of **4b**:



^{1}H NMR spectra of **4c**:



^{13}C NMR spectra of **4c**:



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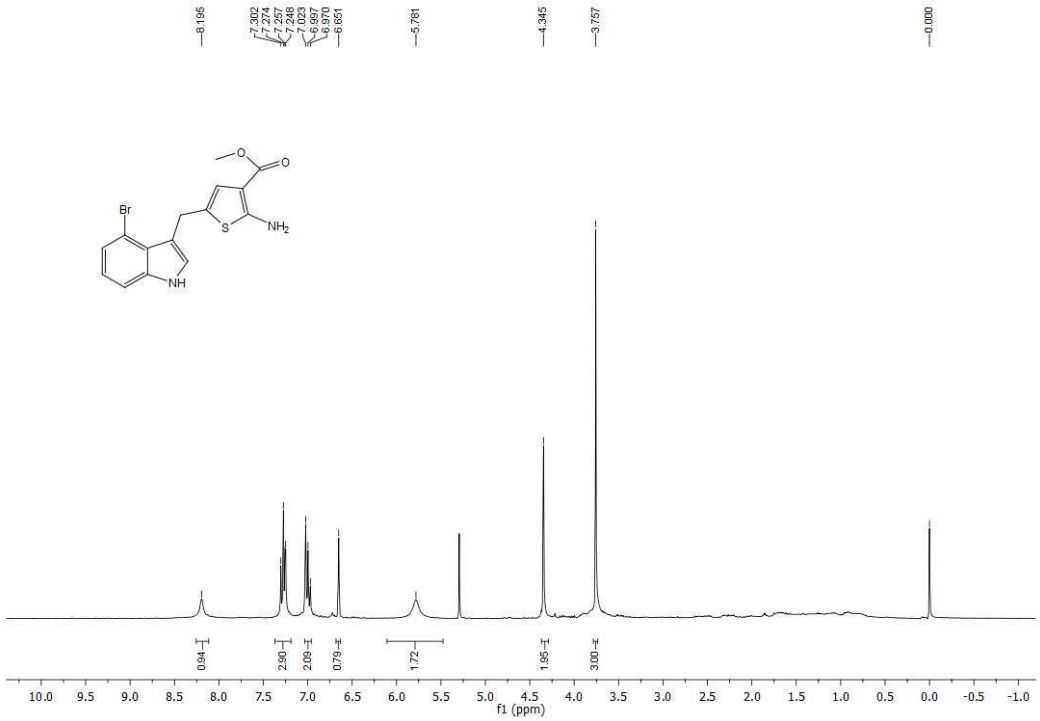
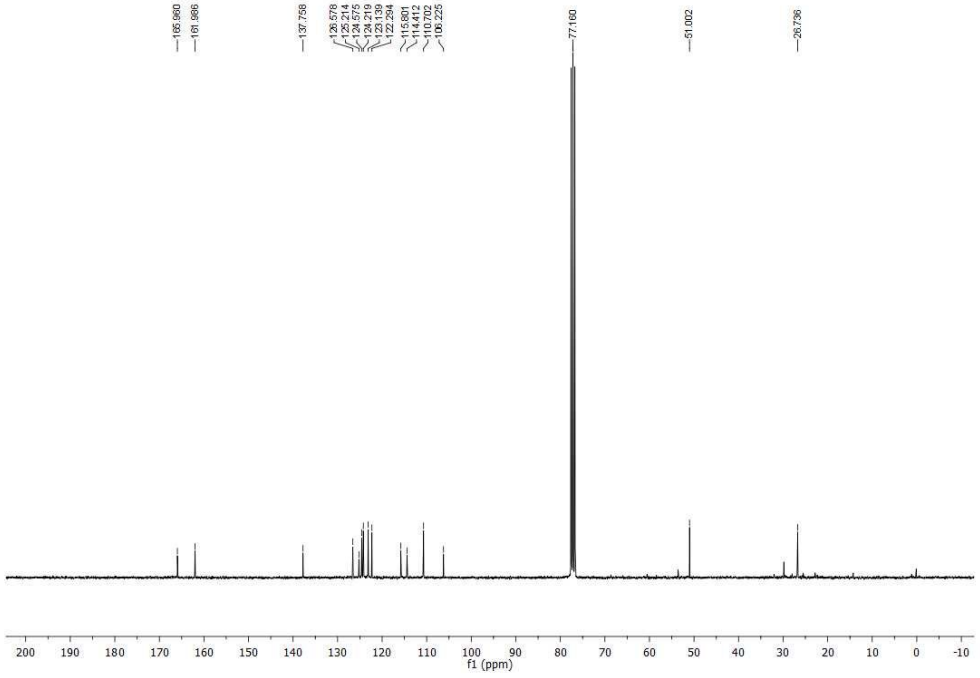


^{13}C NMR spectra of **4d**:



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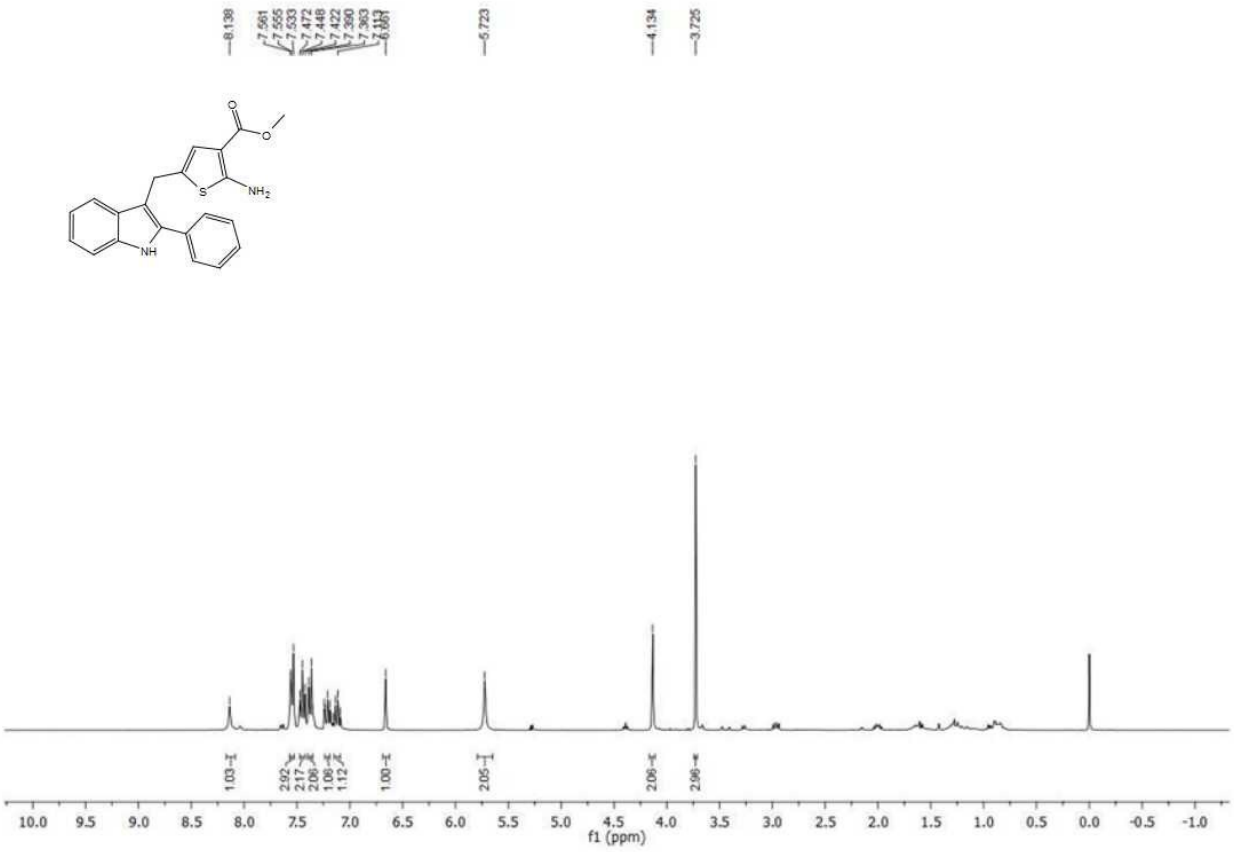
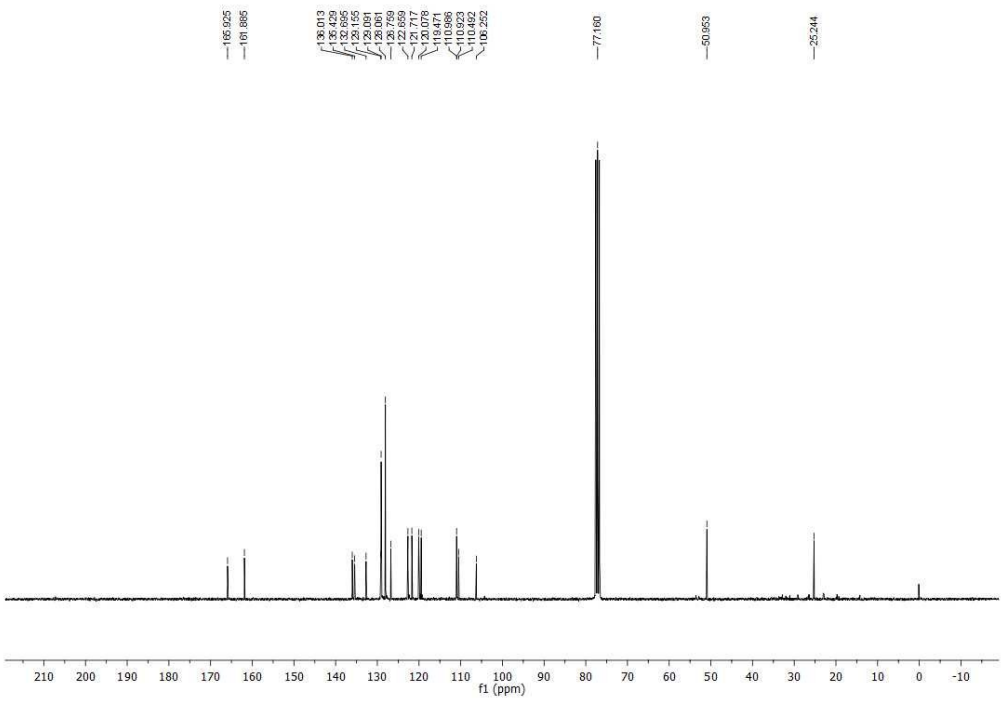


^{13}C NMR spectra of **4e**:



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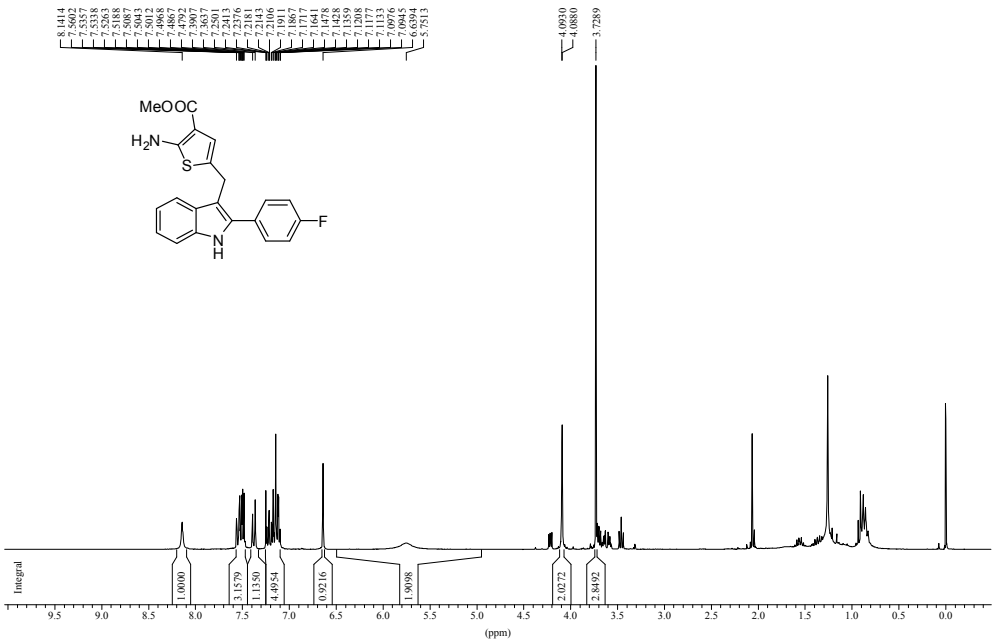
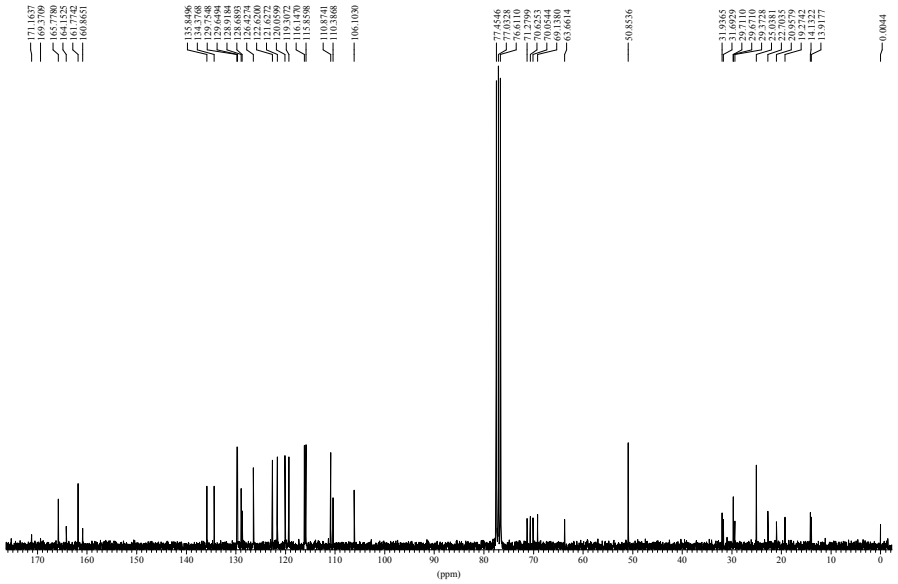


^{13}C NMR spectra of **4f:**



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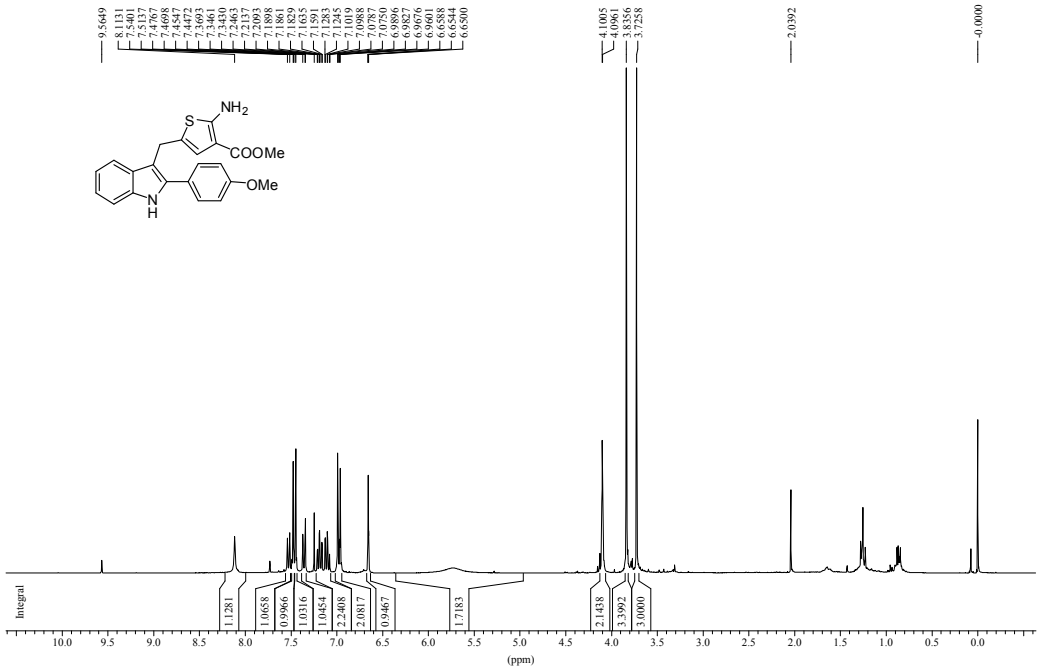

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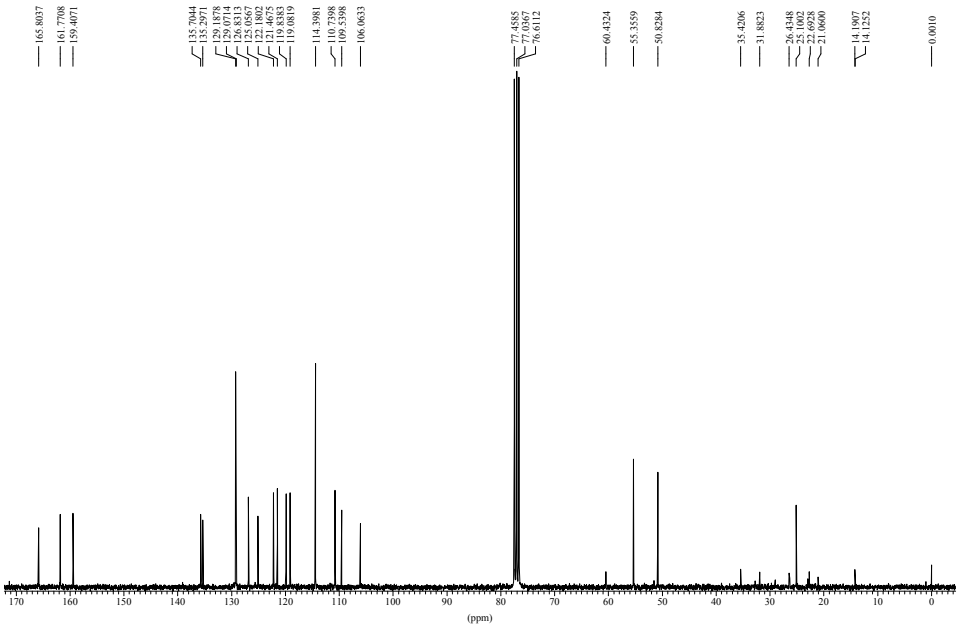

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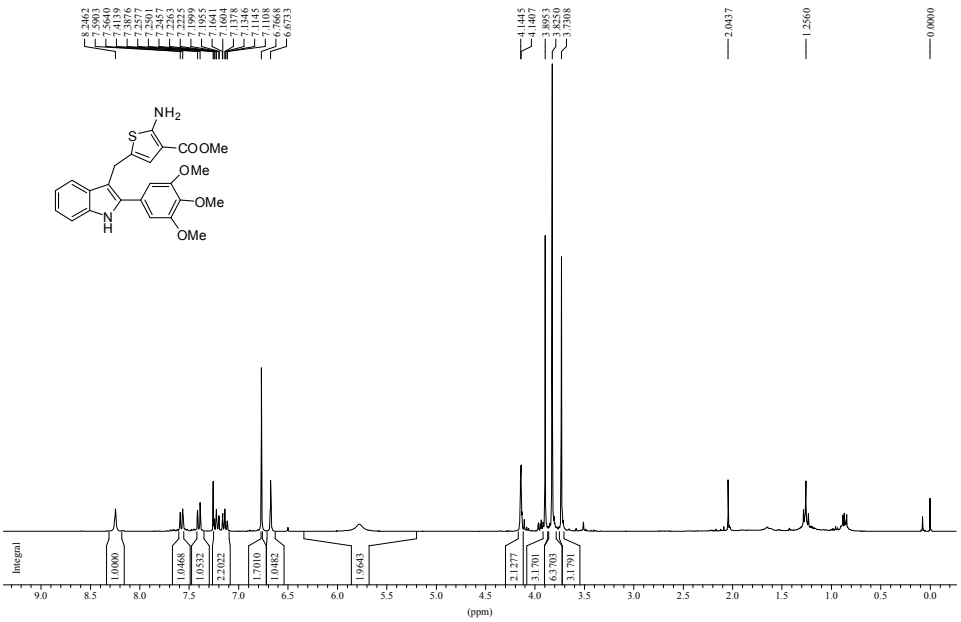
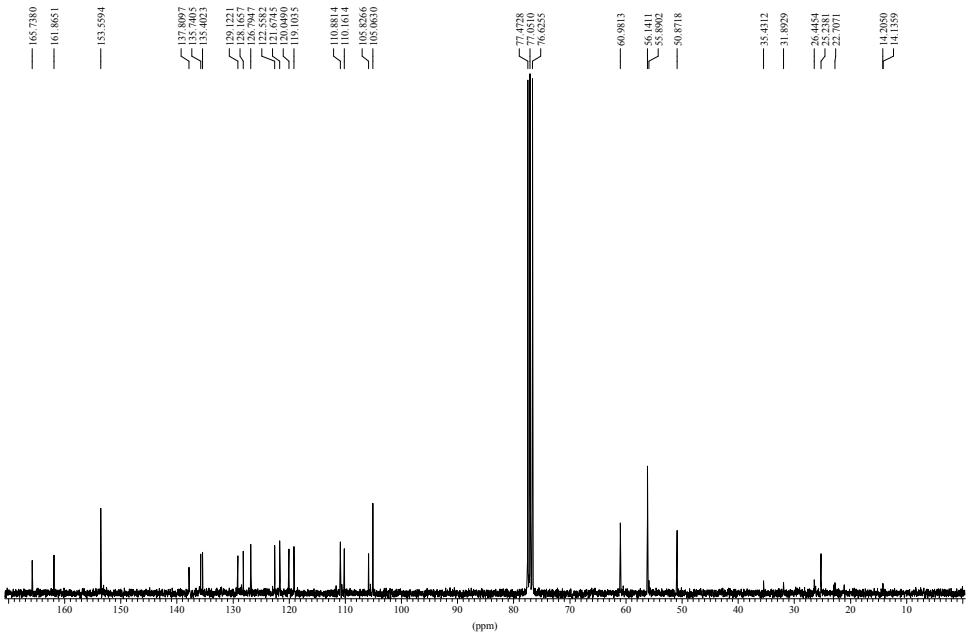


^{13}C NMR spectra of **4h:**



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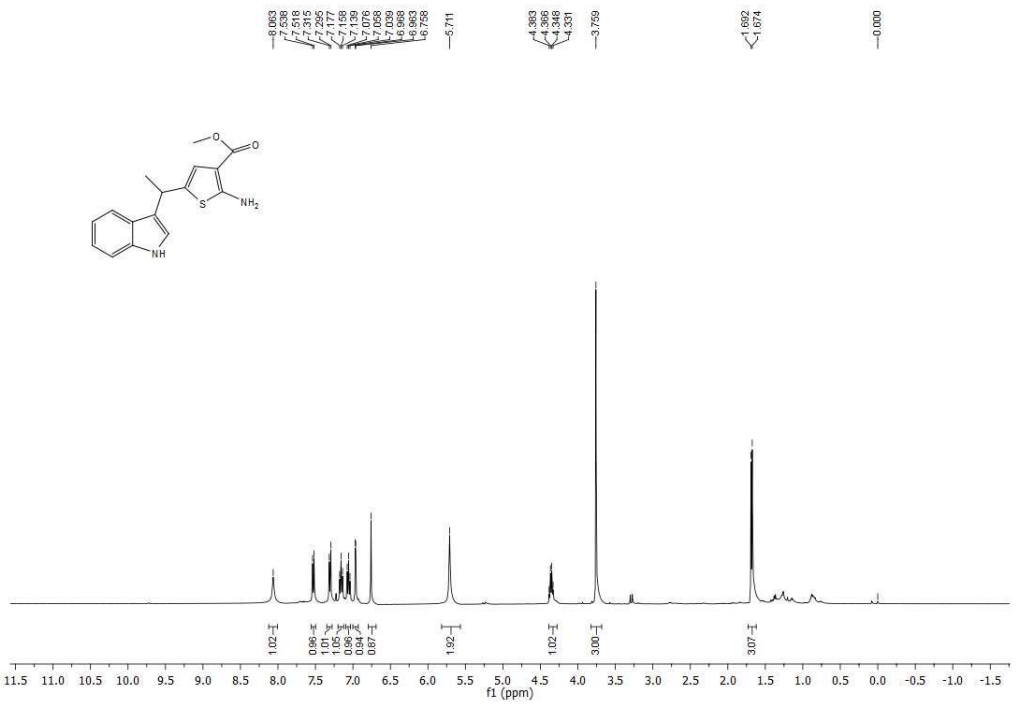

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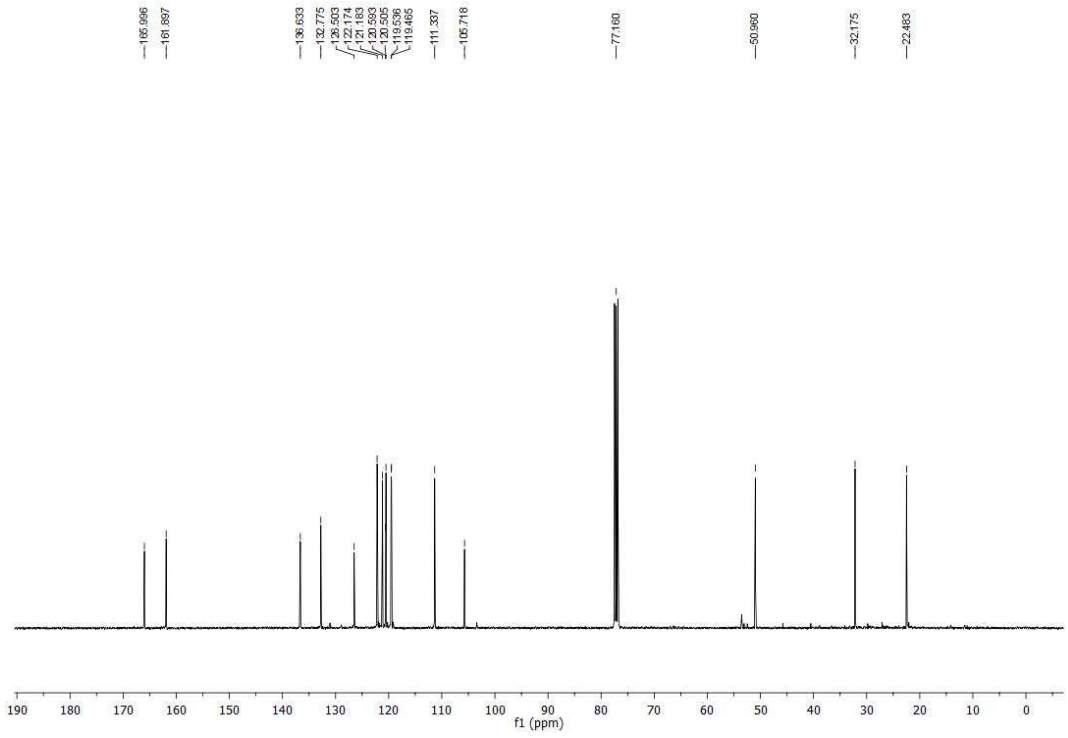

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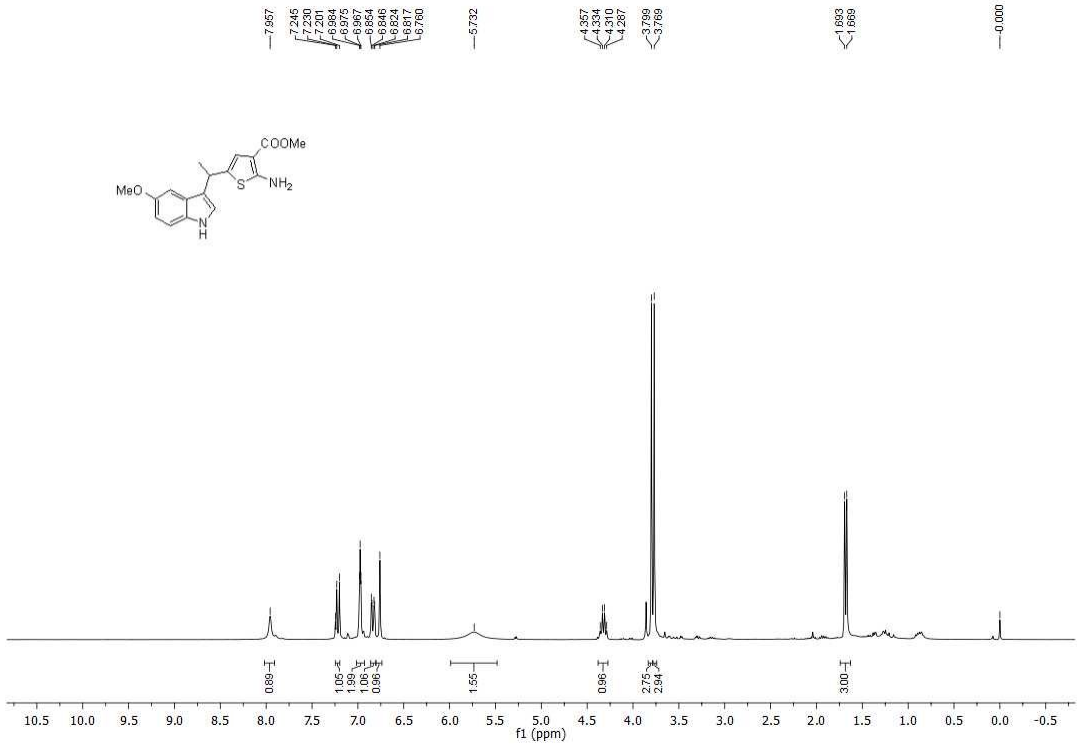

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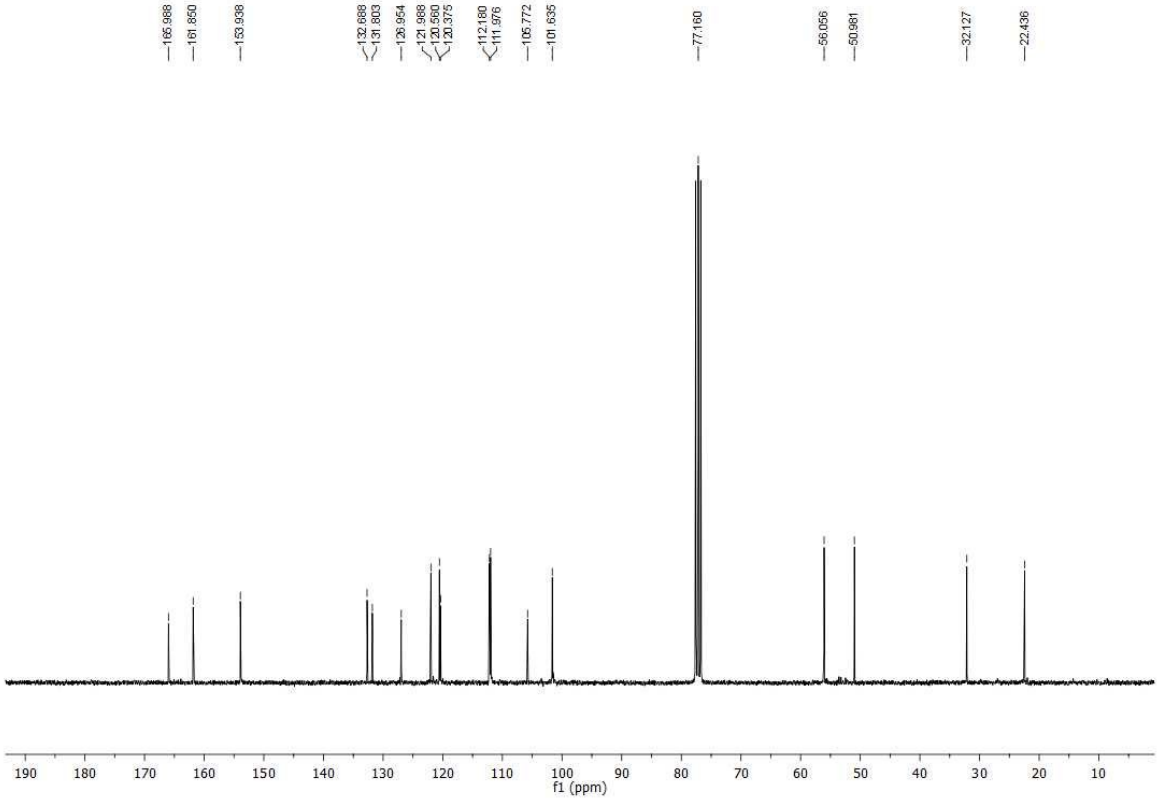

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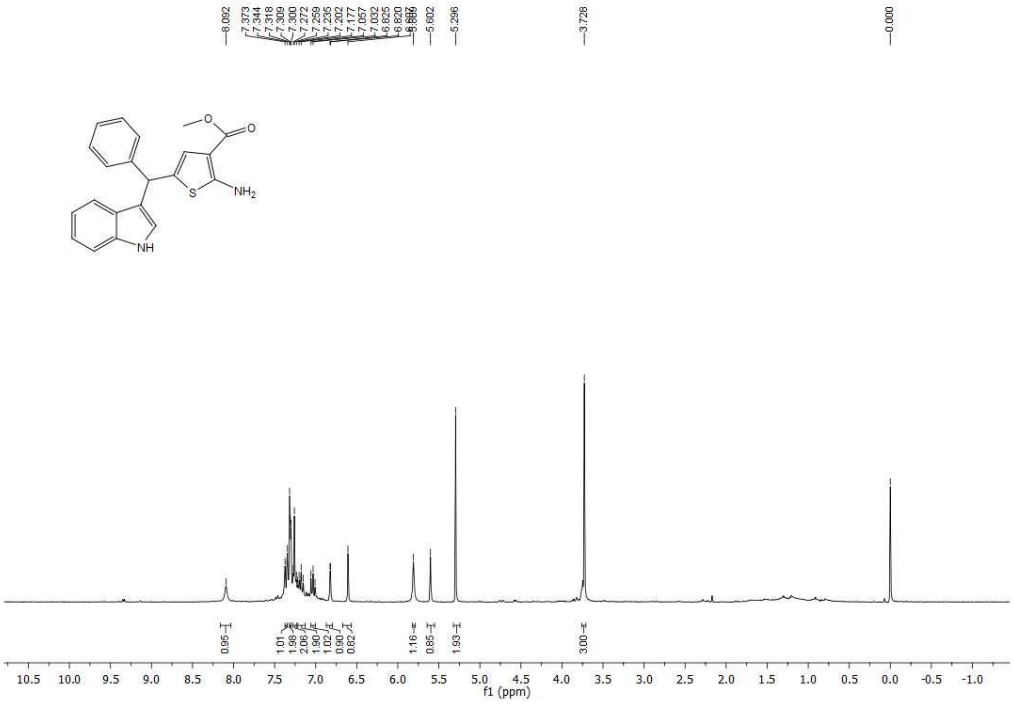

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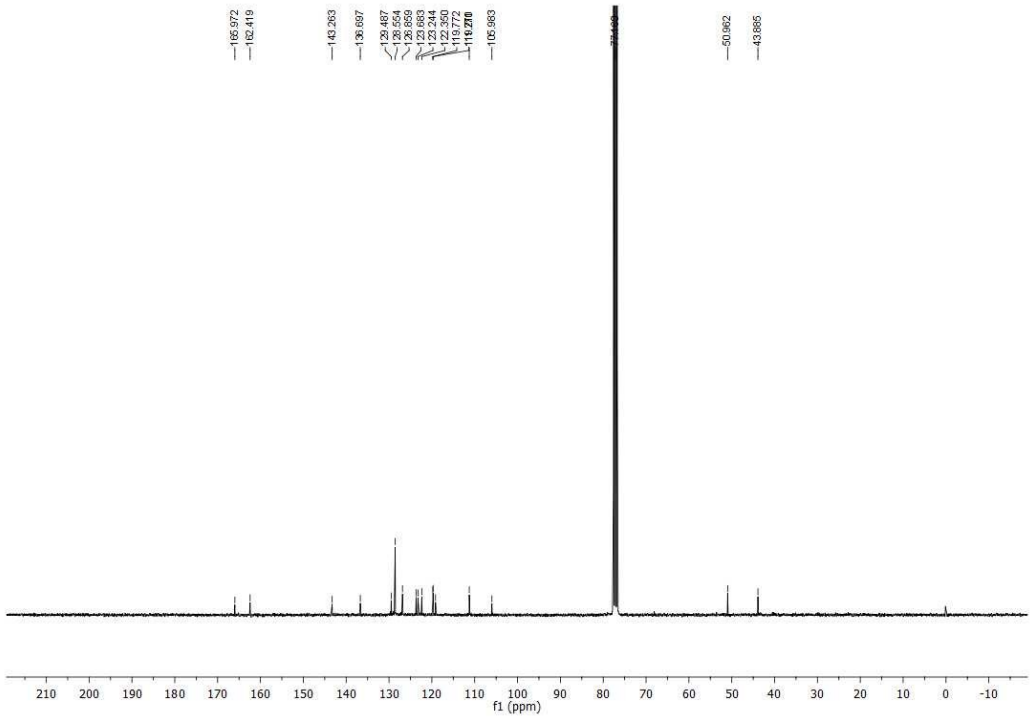

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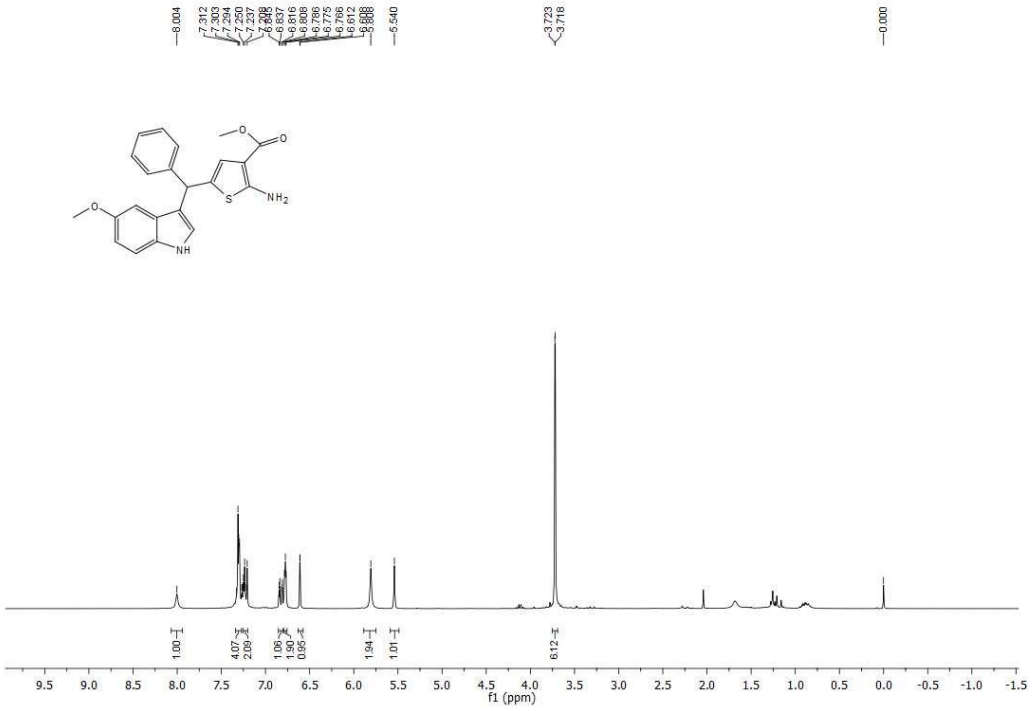

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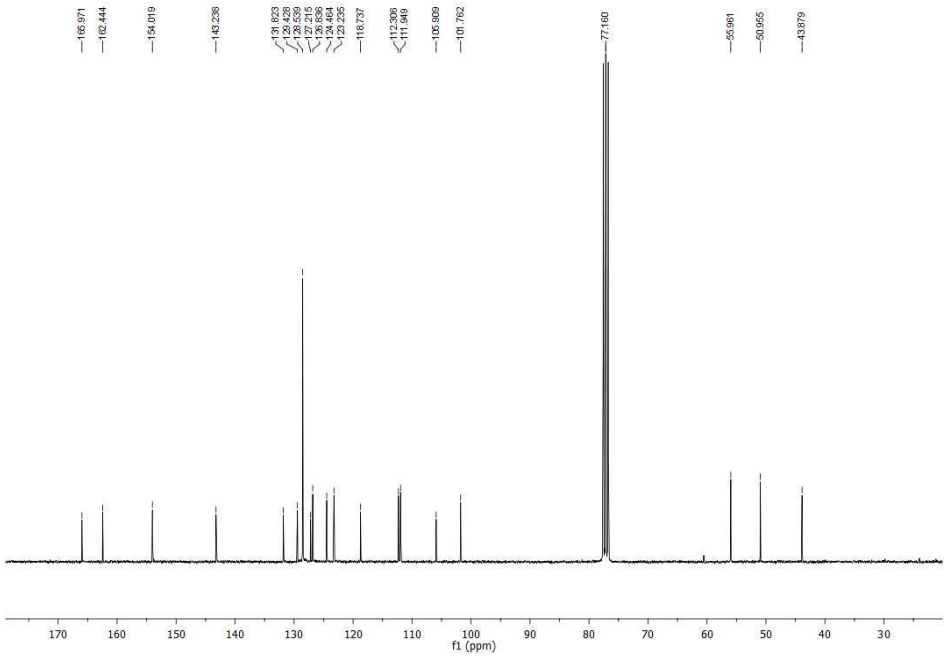

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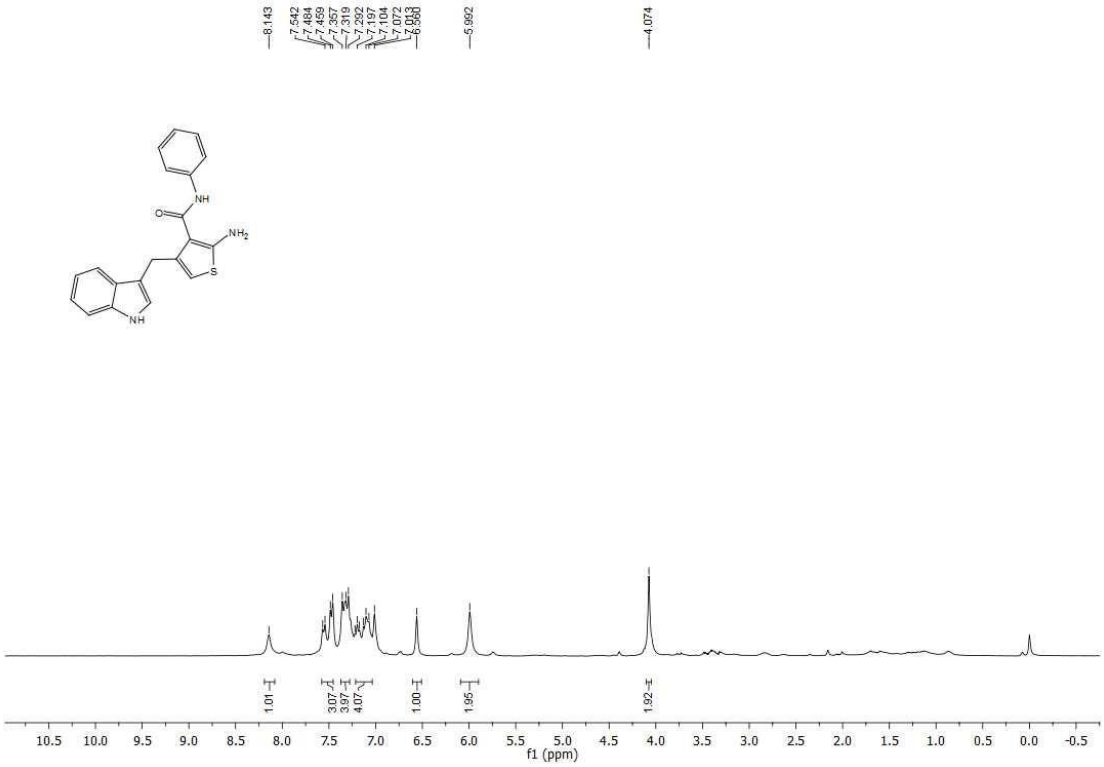

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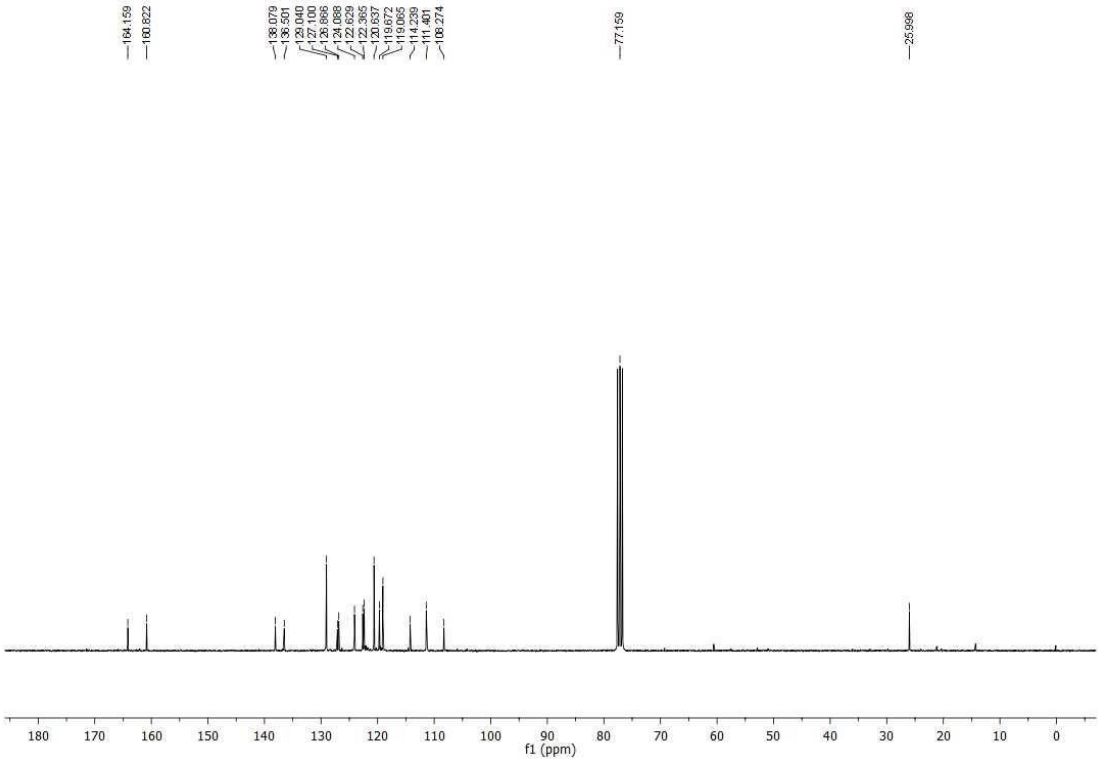
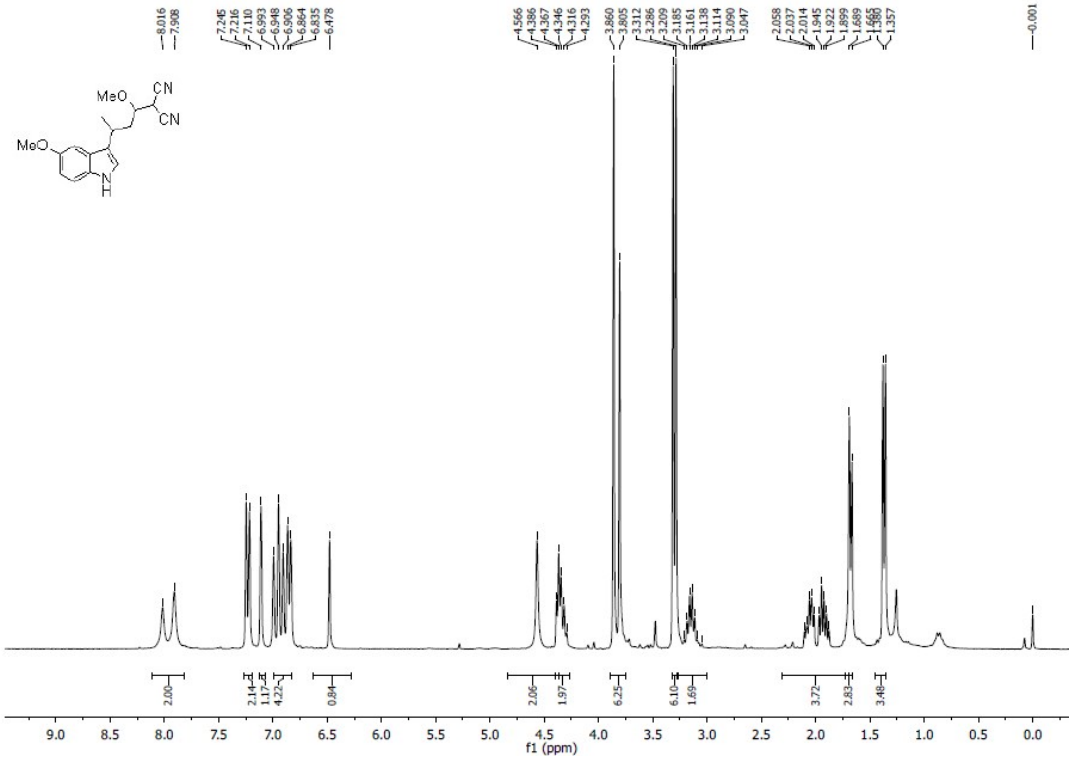
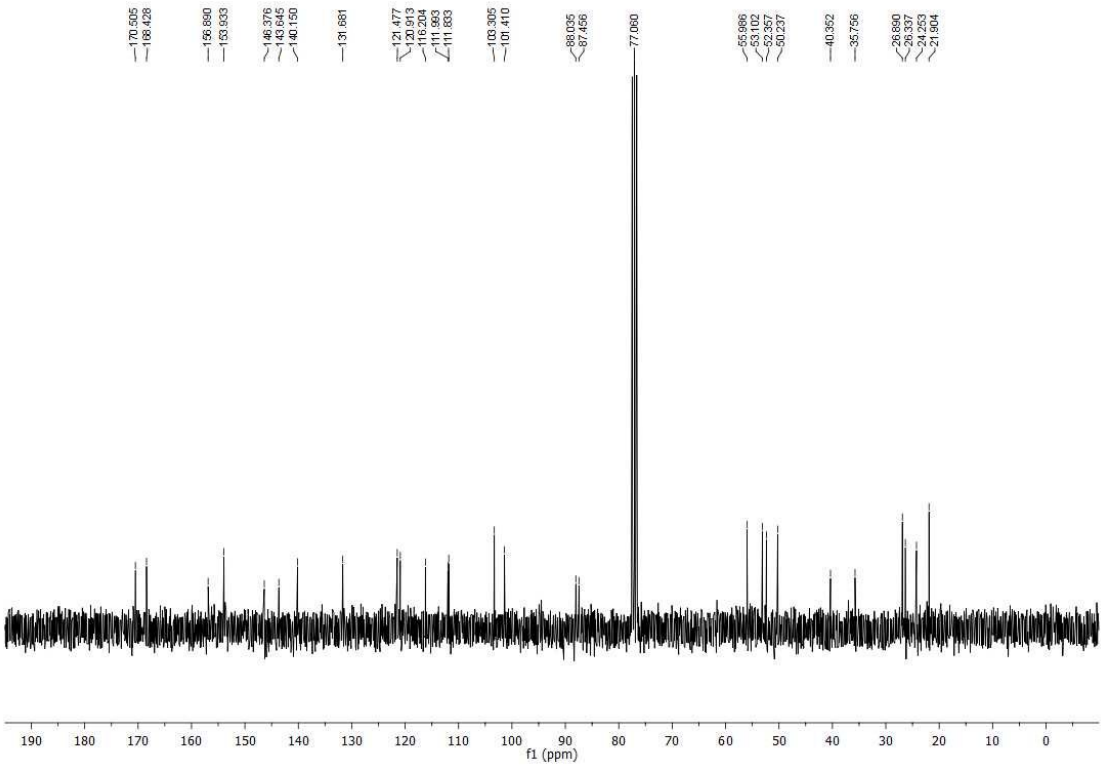


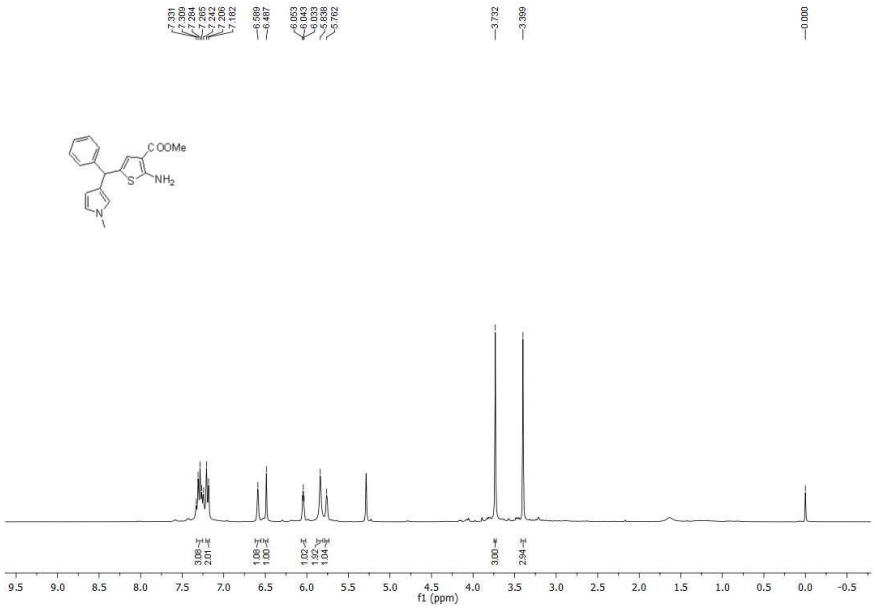
^{1}H NMR spectra of 5o:



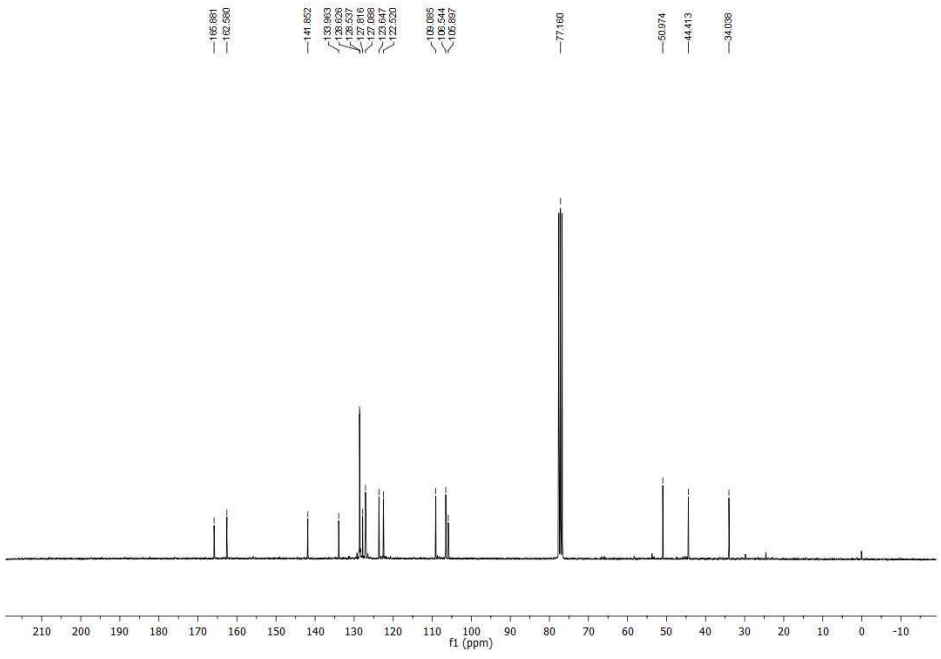
^{13}C NMR spectra of 5o (mixture of diasteriomers):



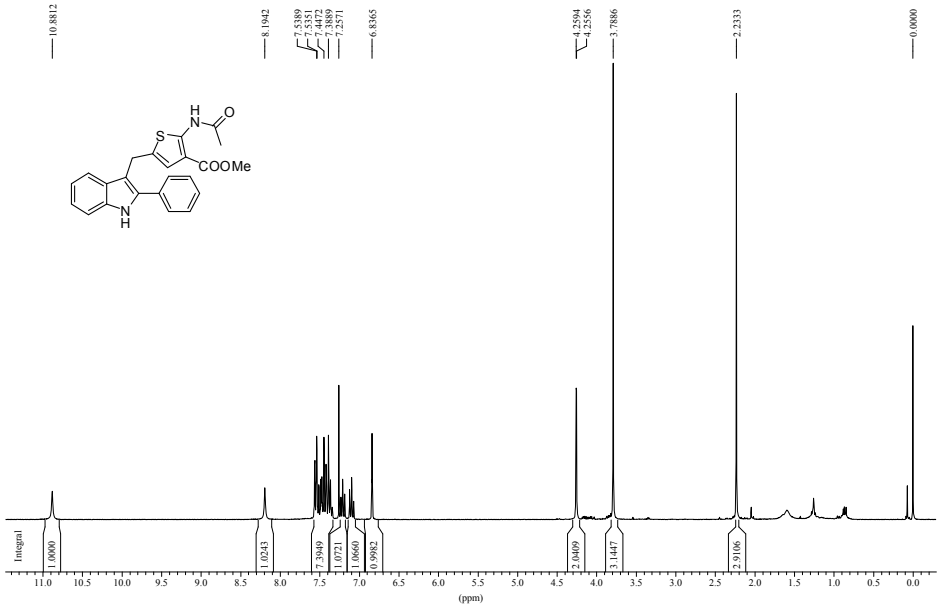
^{1}H NMR spectra of **7:**



^{13}C NMR spectra of **7:**



^{1}H NMR spectra of **8:**



^{13}C NMR spectra of **8:**