SUPPORTING INFORMATION

$Bi(NO_3)_3 \cdot 5H_2O$-catalyzed Mannich Reaction: A Potent Catalyst for Synthesis of β-Aminocarbonyl Compounds

Hasniye Yaşa[1*], and Kübra Demir

[1]Istanbul University-Cerrahpaşa, Engineering Faculty, Chemistry Department, 34320 Avcilar, Istanbul, Turkey

[2]Istanbul University-Cerrahpasa, Institute of Science, Chemistry Division, Avcilar-Istanbul, Turkey

*Correspondence: hasniye@istanbul.edu.tr

2. General procedure

The chemicals used in this study were commercially available from Merck and Aldrich and were used without further purification. The obtained compounds were purified by crystallization. ^{1}H and ^{13}C NMR (500 and 125 MHz, respectively) spectra were recorded using Me_4Si as the internal standard in $CDCl_3$. Mass spectra were obtained on Thermo Finnigan LCQ Advantage MAX MS/MS spectrometer. FT-IR spectra were recorded on Bruker Vertex 70.

General procedure for the synthesis of *β*-amino carbonyl compounds

Ketone (2.2 mmol), aldehyde (2 mmol) and amine (2 mmol) and 10 mol % $Bi(NO_3)_3$ [11-13] were added to a one-necked round bottom flask. The reaction mixture was stirred vigorously with a magnetic stirrer at room temperature (r.t.) for the mentioned time. After reaction completion, EtOH and H_2O at the reaction-mixture was evaporated at ambient temperature. Then 60 ml of hot CH_2Cl_2 was added to dissolve the solid product. The catalyst was removed by filtration and the organic layer was washed twice with saturated $NaHCO_3$ solution, dried with Na2SO4, and evaporated. The product was purified by recrystallization from an ethanol–acetone mixture (3/2, v/v) to afford the corresponding compounds.

Compounds (**4a-f**, **4h-i,** and **4k-n**) are known in the literature and their results are in accordance with the literature. The analytical and spectral data of the other products (**4g**, **4j,** and **4o**) so obtained were as follows:

Spectral Data

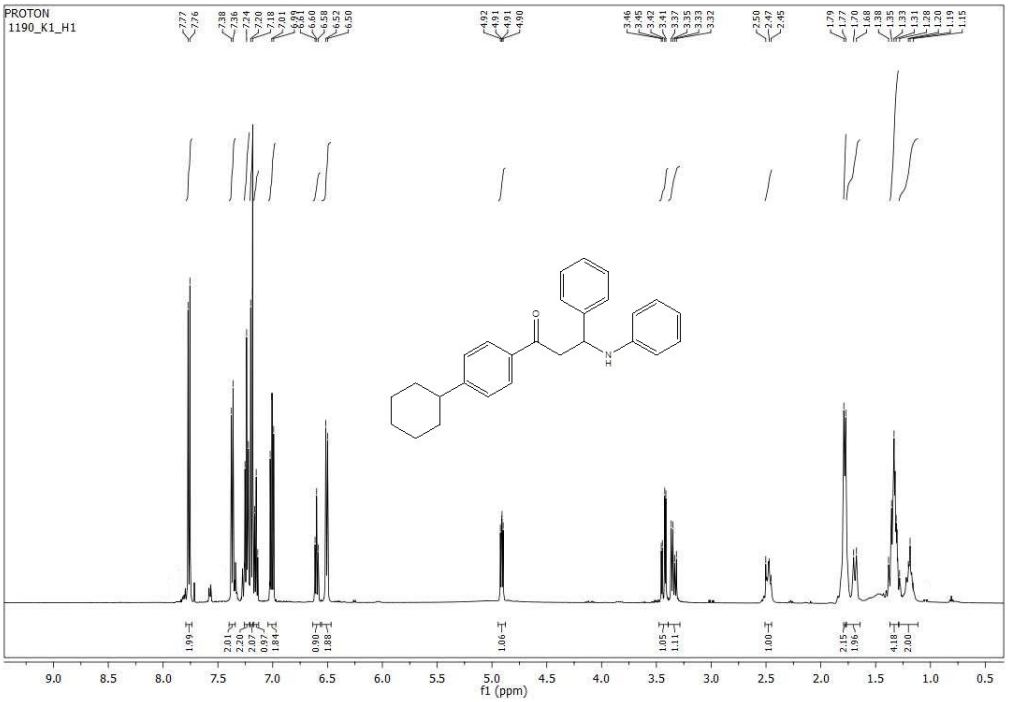

Figure S1. ^{1}H-NMR spectrum of compound **4g** (500 MHz, $CDCl_3$)

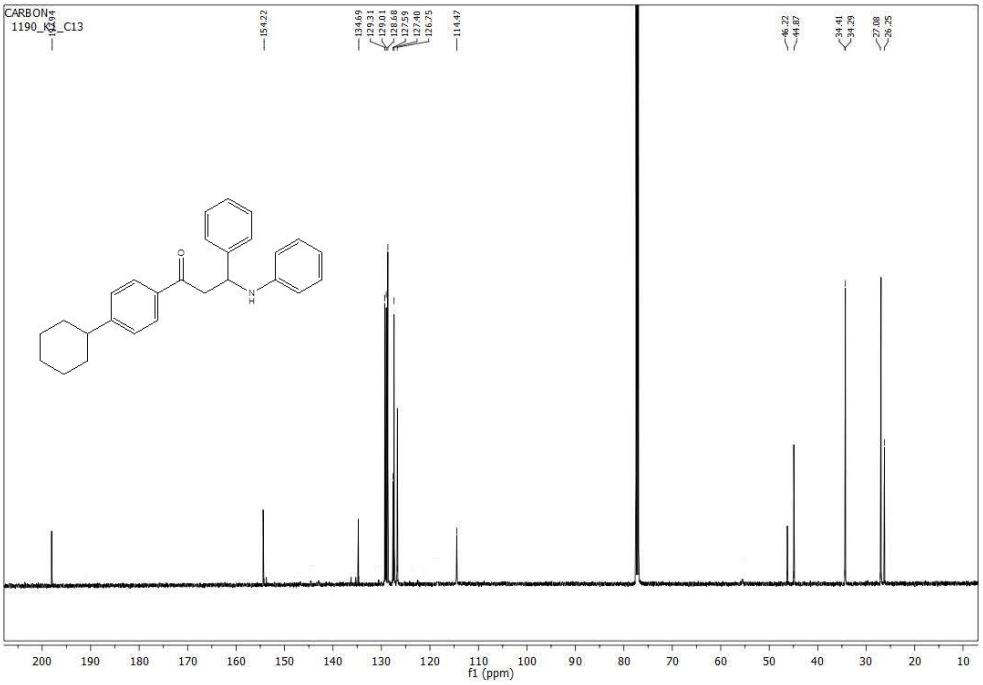

Figure S2. ^{13}C-NMR spectrum of compound **4g** (125 MHz, $CDCl_3$)

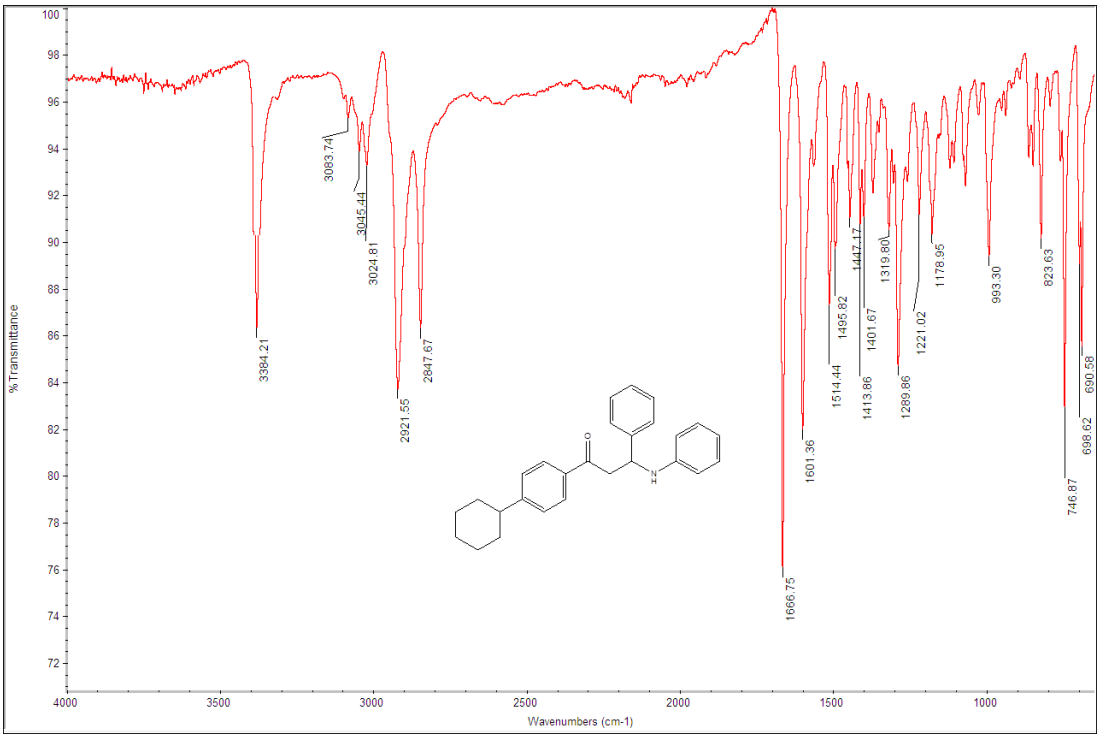

Figure S3. IR spectrum of compound **4g**

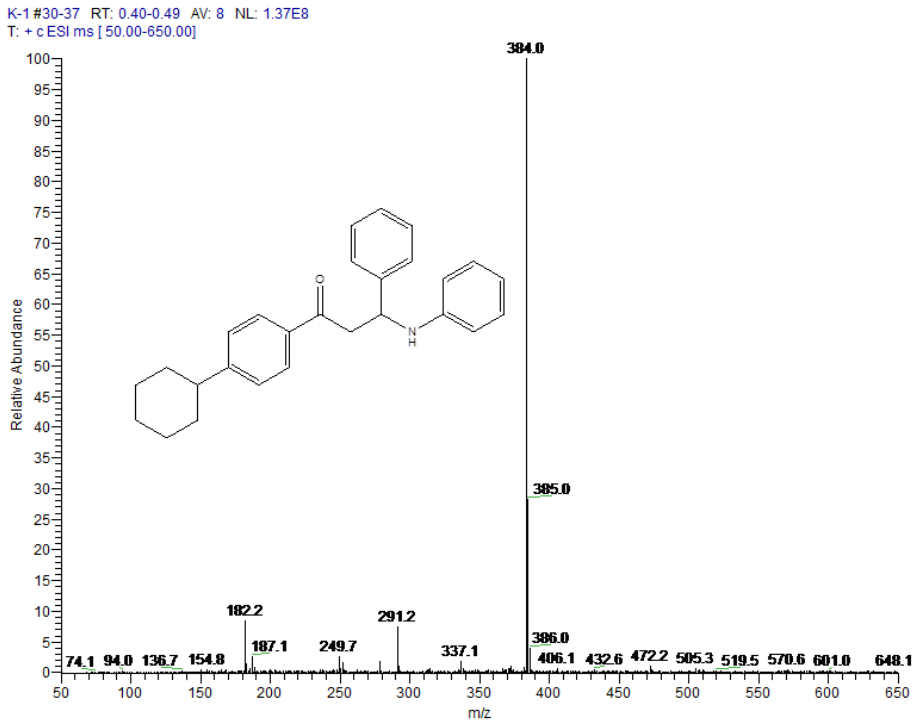

Figure S4. MS spectrum of compound **4g**

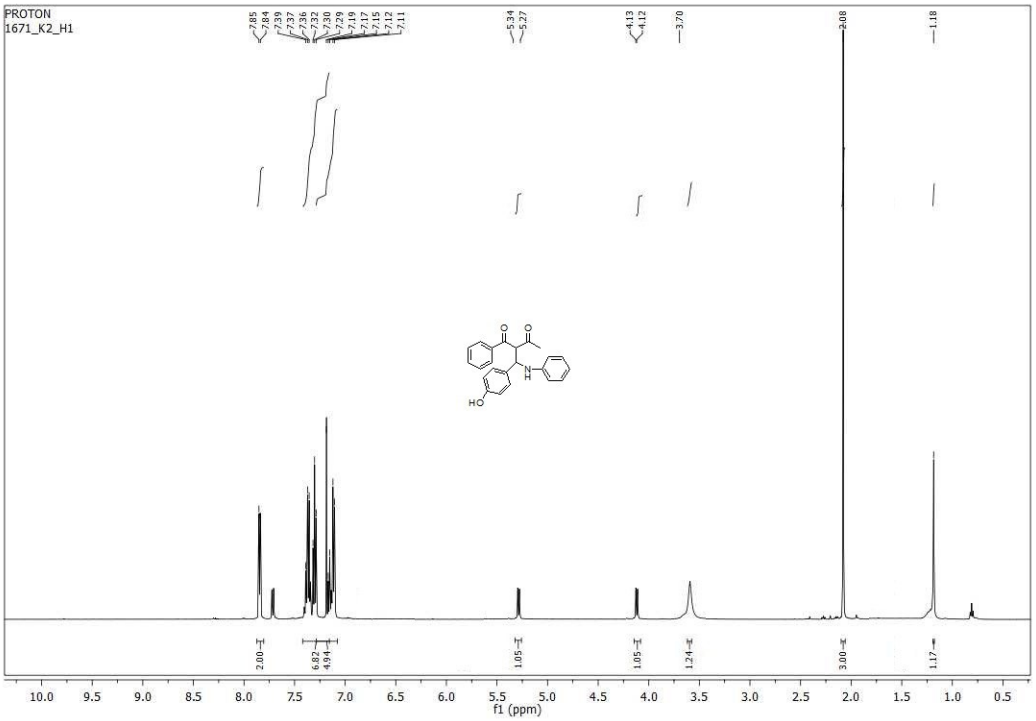

Figure S5. ^{1}H-NMR spectrum of compound **4j** (500 MHz, $CDCl_3$)

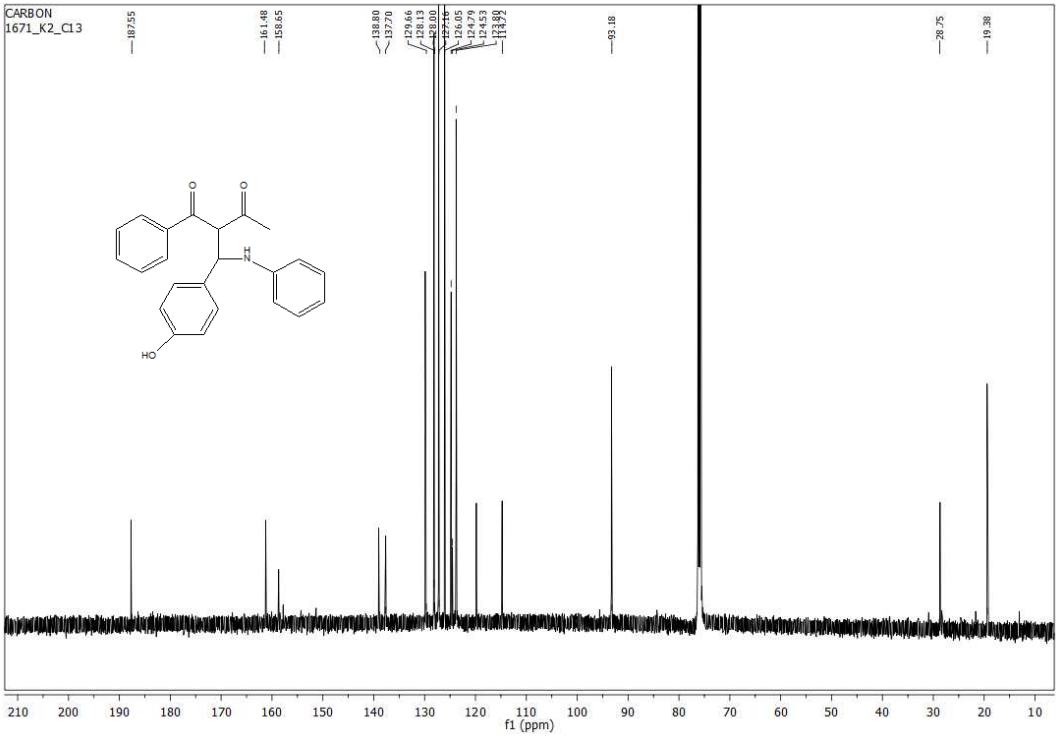

Figure S6. ^{13}C-NMR spectrum of compound **4j** (125 MHz, $CDCl_3$)

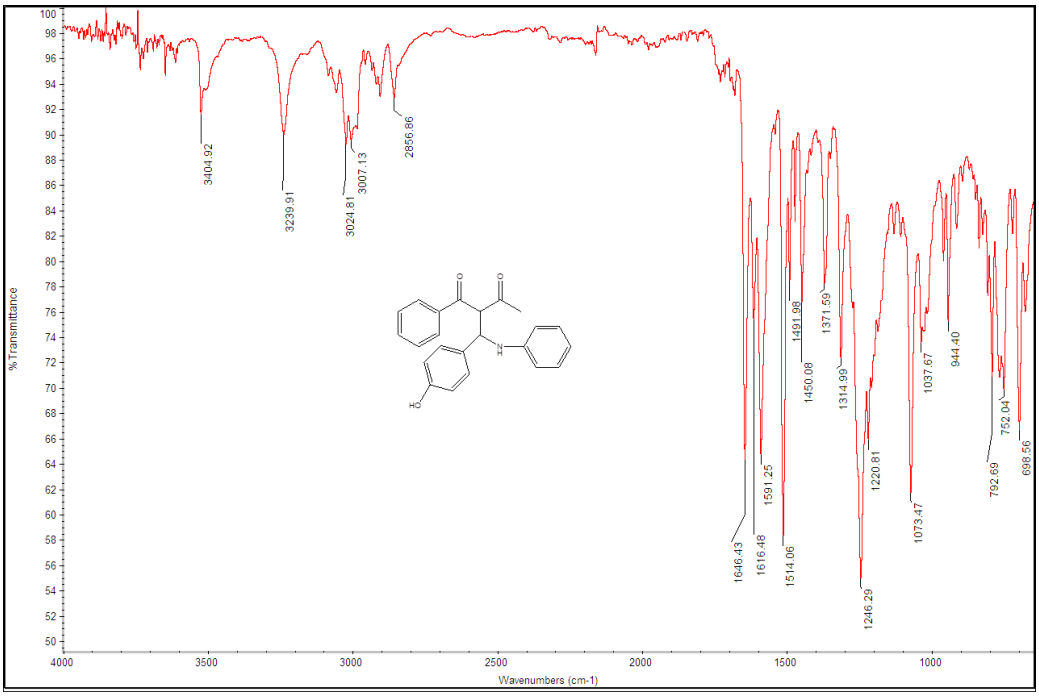

Figure S7. IR spectrum of compound **4j**

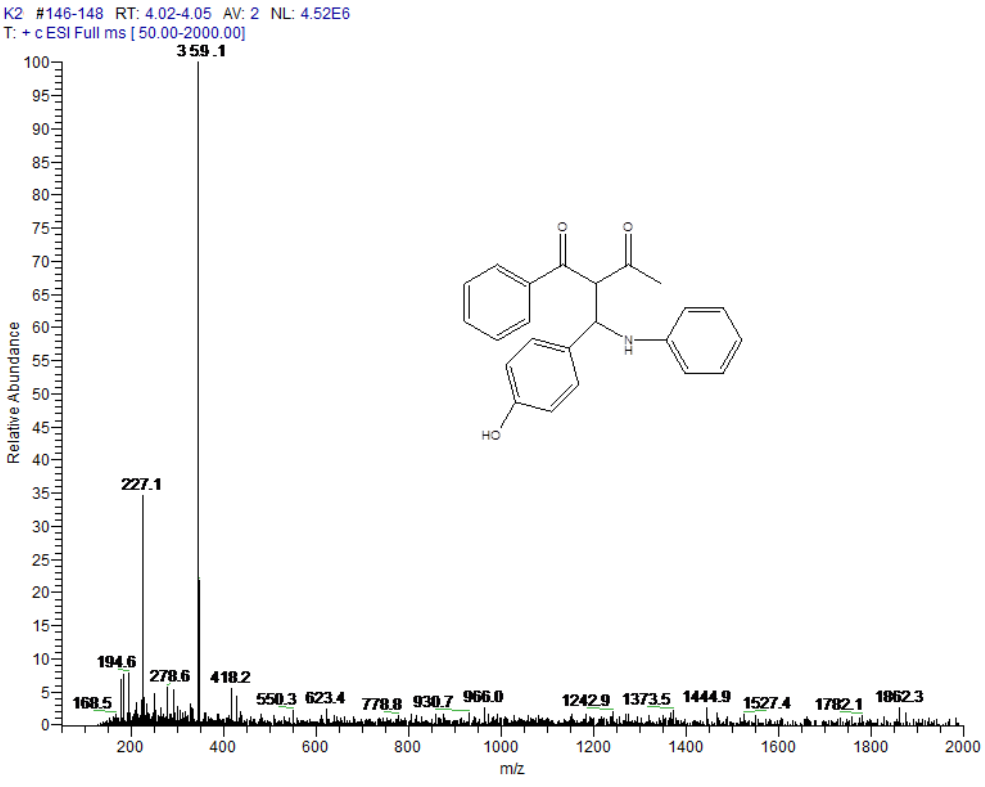

Figure S8. MS spectrum of compound **4j**

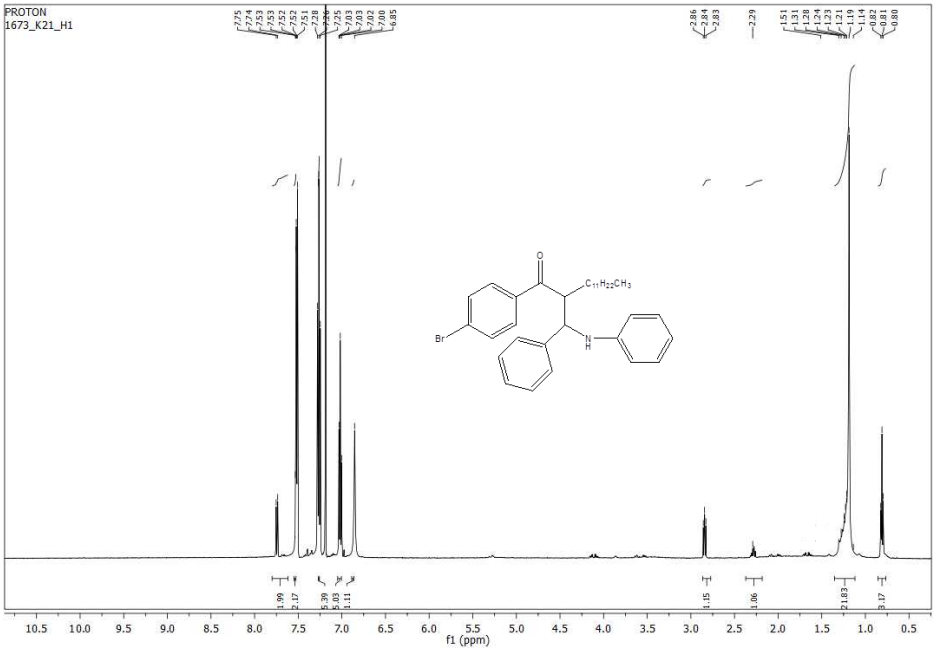

Figure S9. ^{1}H-NMR spectrum of compound **4o** (500 MHz, $CDCl_3$)

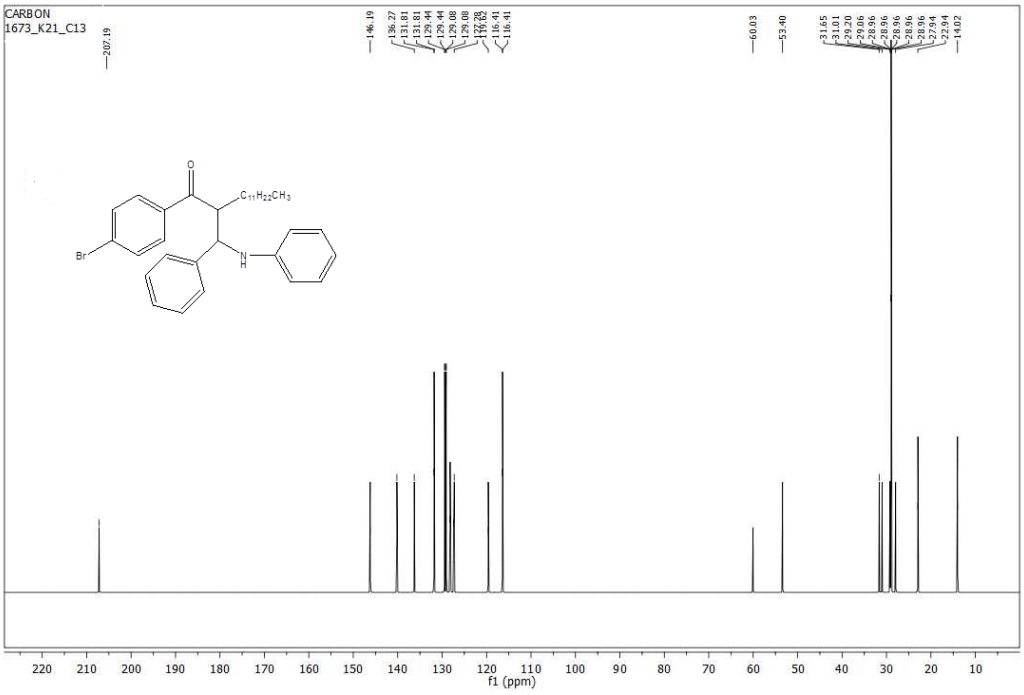

Figure S10. ^{13}C-NMR spectrum of compound **4o** (125 MHz, $CDCl_3$)

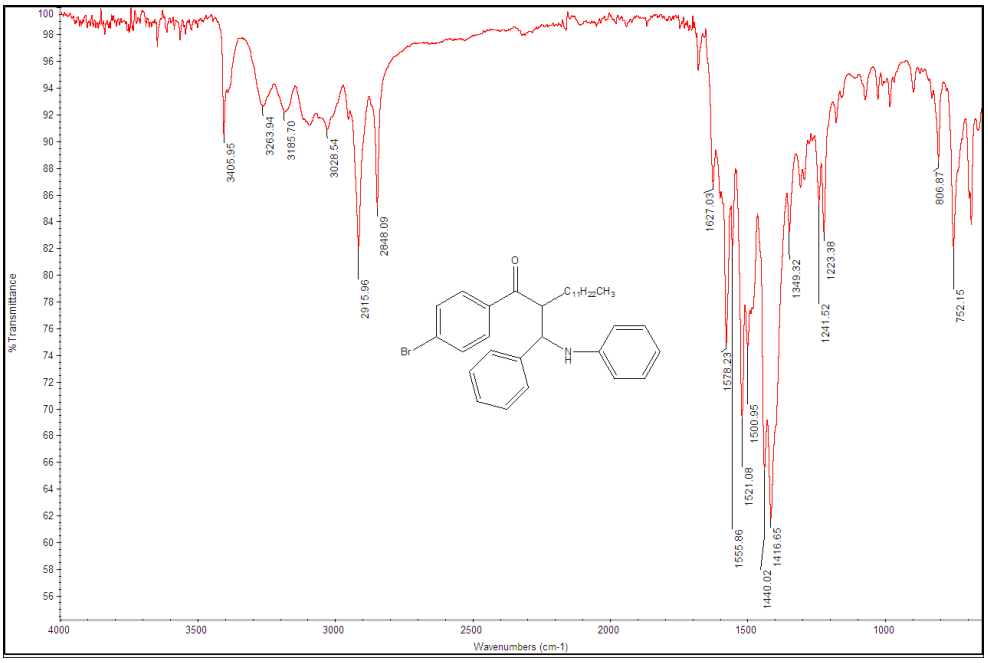

Figure S11. IR spectrum of compound **4o**

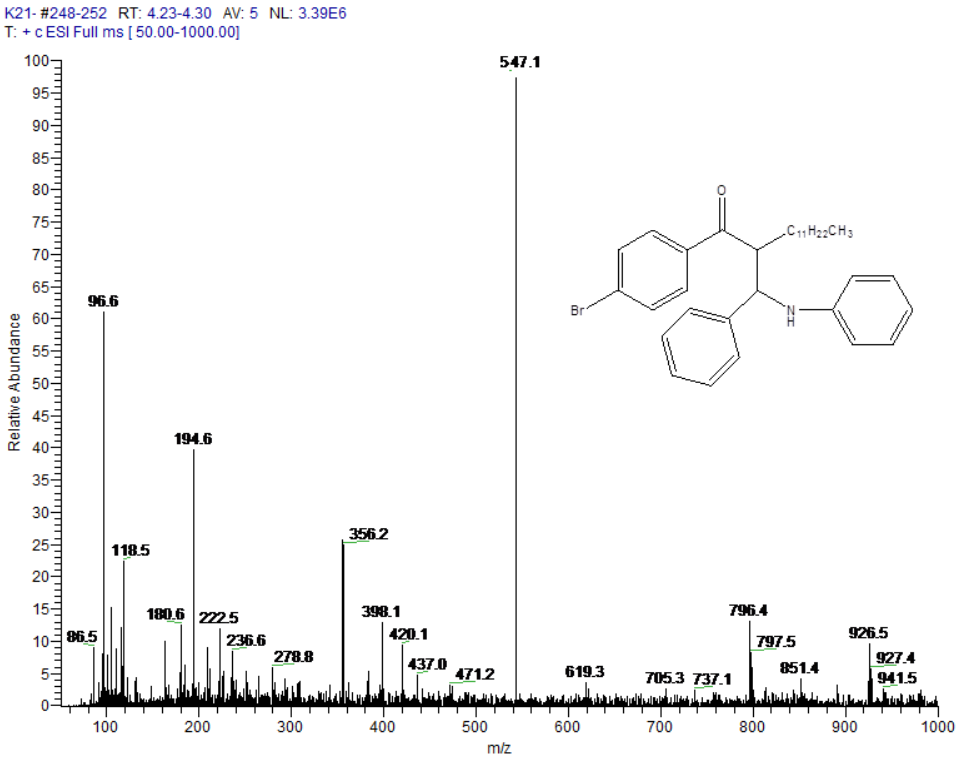

Figure S12. MS spectrum of compound **4o**