Supplementary Information

A Straightforward Method for Synthesizing Bioactive Resorcinolic Lipid Analogues

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Experimental procedure [1]

(*E*)-ethyl undec-2-enoate (4): PCC (18.24 g, 300 mmol) was suspended in 120 mL of anhydrous dichloromethane, and 1-nonanol (6.6 g, 8 mL, 200 mmol) was added under stirring. The resulting mixture was refluxed for 2 h and left to cool. A 20 mL volume of ethyl ether was then added, the mixture filtered in celite, and the solid washed with dichloromethane (3 × 40 mL). The organic phases were combined and the solvent removed under reduced pressure. Freshly prepared nonaldehyde (142 g, 0.8 mol) was slowly added under stirring to a solution of malonic acid (114 g, 1.1 mol) in anhydrous pyridine (180 mL) previously cooled to 0 °C. The resulting reactive mixture was stirred at room temperature for 60 h and subsequently heated in a water bath (50-80 °C) until CO_2 evolution was no longer detected (~8 h). A 400 mL volume of distilled water was then added to this mixture. The organic phase was separated and washed with 25% HCl (3 × 100 mL) for pyridine removal. The solvent was then removed, the residue dissolved in benzene and washed with distilled water (3 × 60 mL), the organic phase dried with anhydrous $MgSO_4$, and the benzene solvent distilled under reduced pressure, yielding 124 g of (*E*)-undec-2-enoic acid as a colorless liquid. For preparation of ester **4**, 100 g (0.31 mol) of (*E*)-undec-2-enoic acid was dissolved in ethanol (384 mL), followed by addition of sulfuric acid (7.7 mL). The mixture thus obtained was refluxed for 5 h and allowed to rest at room temperature for a further 24 h, after which the product was extracted with dichloromethane. The solvent was removed under reduced pressure and a 65 g amount of ester **4** was obtained as a colorless liquid. The overall yield (calculated from 1-nonanol) was 48%.

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[1] Vogel. A. I.; Furniss. B. S.; Hannaford A. J.; Smith P.W.G.; Tatachell A. R. **Vogel's Textbook of Pratical Organic Chemistry**. Co-published in the United States, 605 Third Avenue, New York, Longman Group UK Ltd., **1989**, 5th ed., pp. 806-807.

^{1}H NMR and ^{13}C NMR spectra of the synthesized compounds

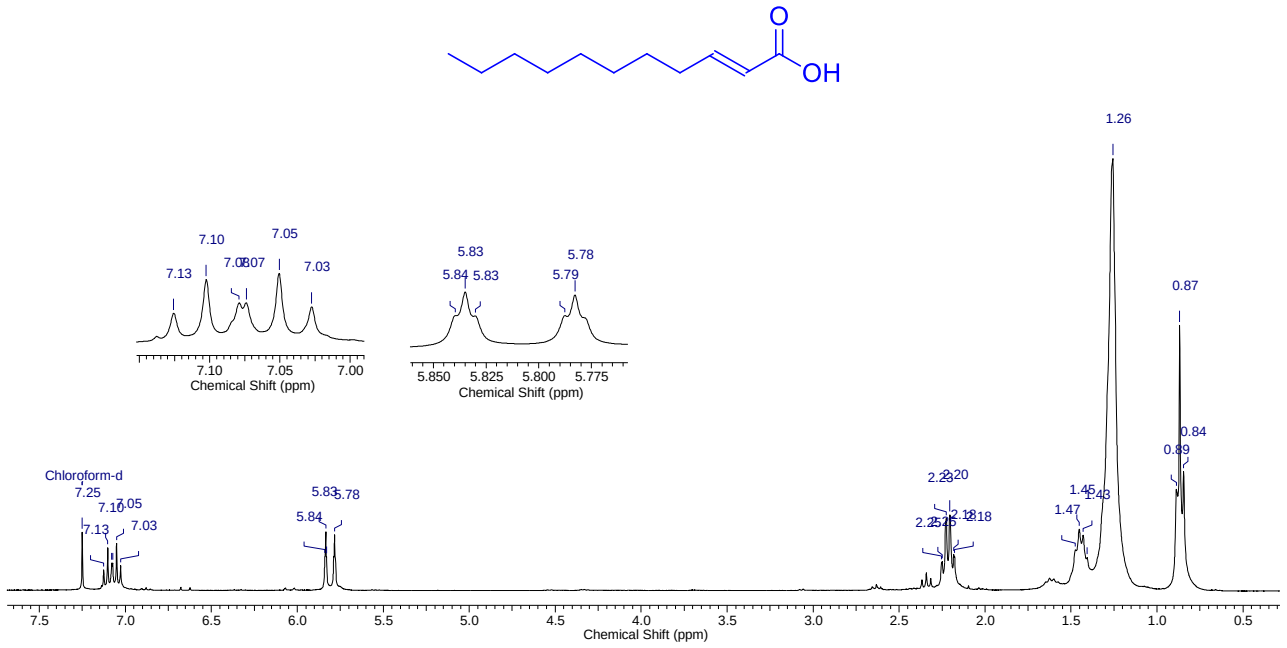


Figure S1. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of (*E*)-undec-2-enoic acid.

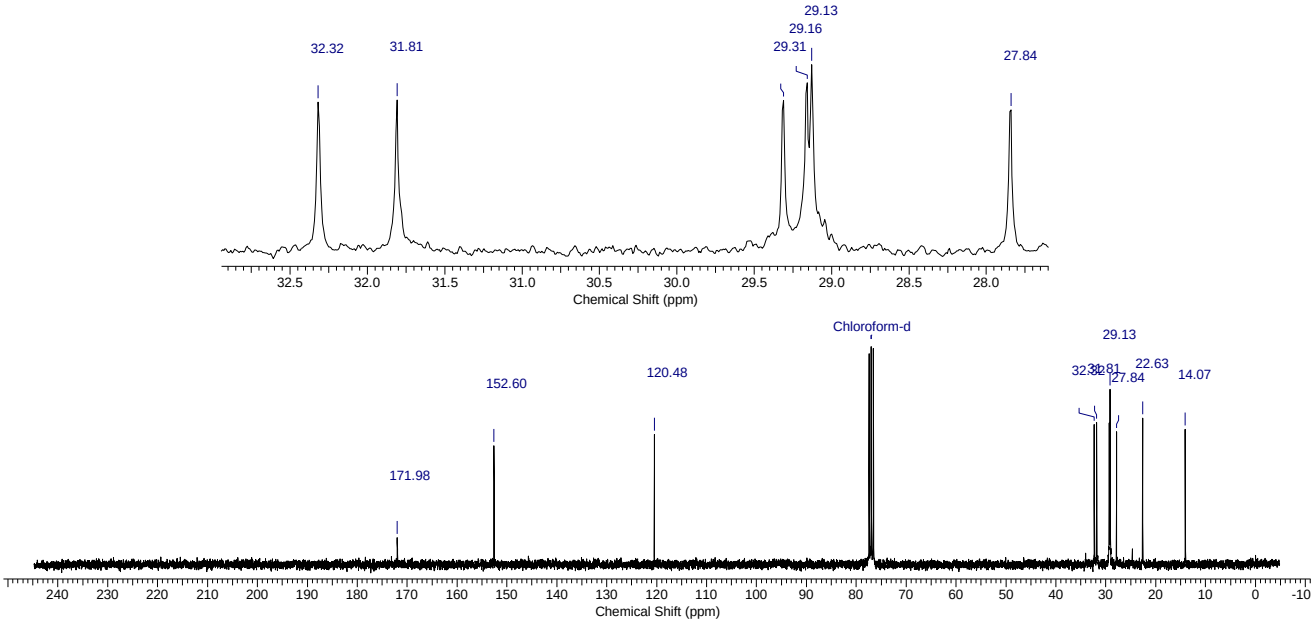


Figure S2. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of (*E*)-undec-2-enoic acid.

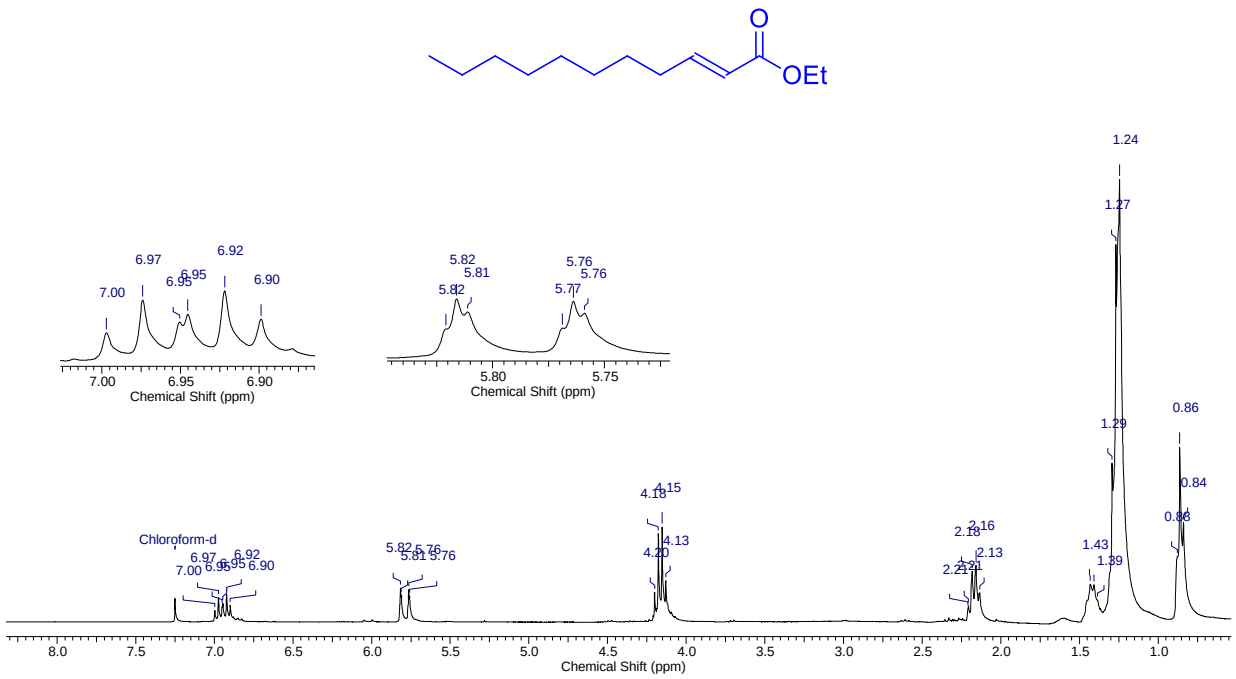


Figure S3. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of (*E*)-ethyl undec-2-enoate (**4**).

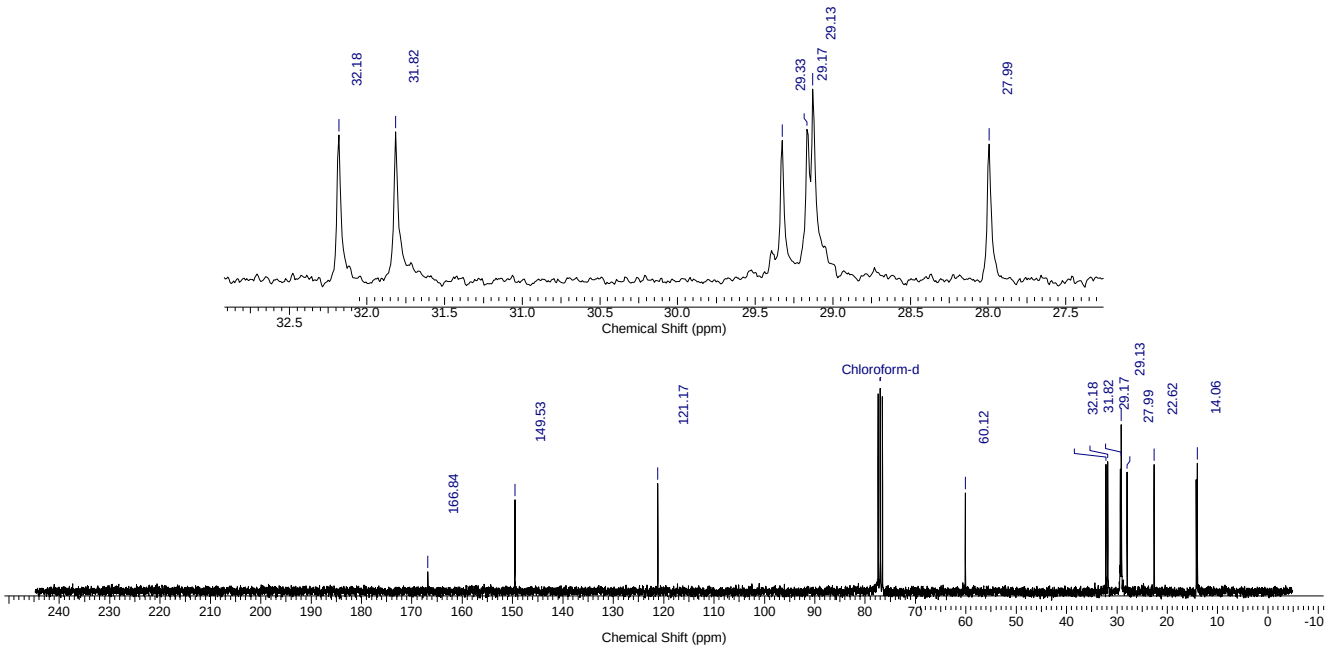
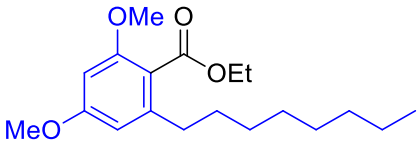


Figure S4. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of (*E*)-ethyl undec-2-enoate (**4**).



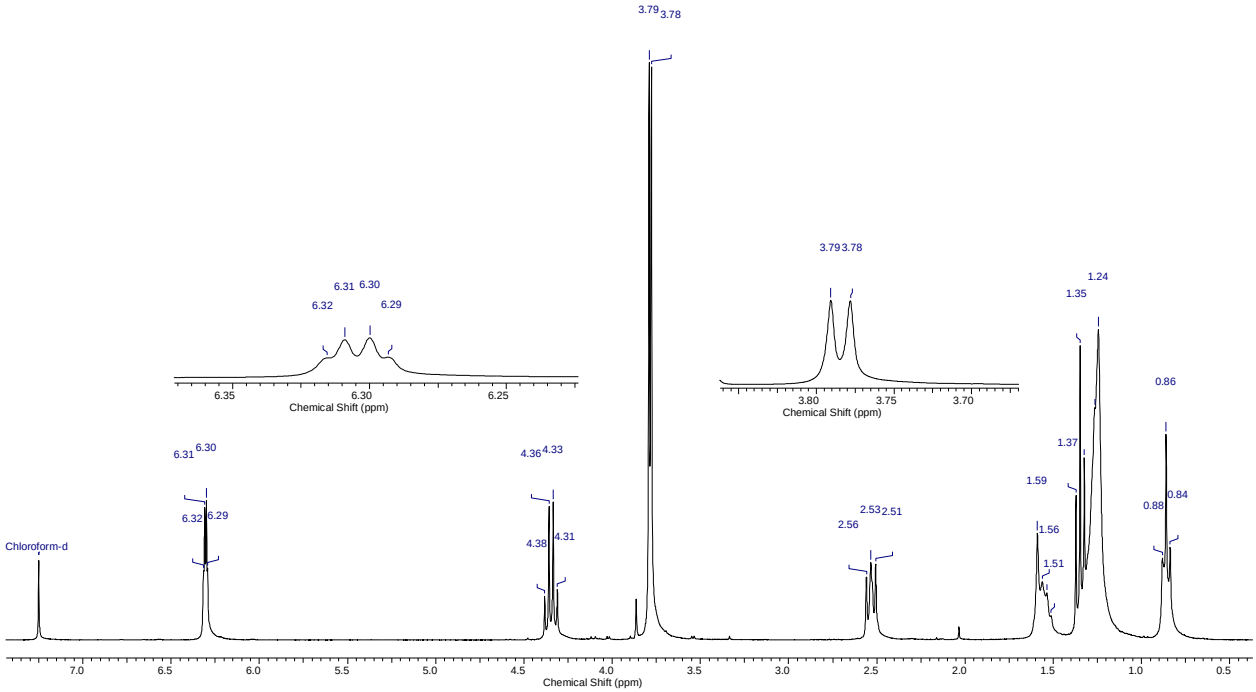


Figure S5. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **1.**

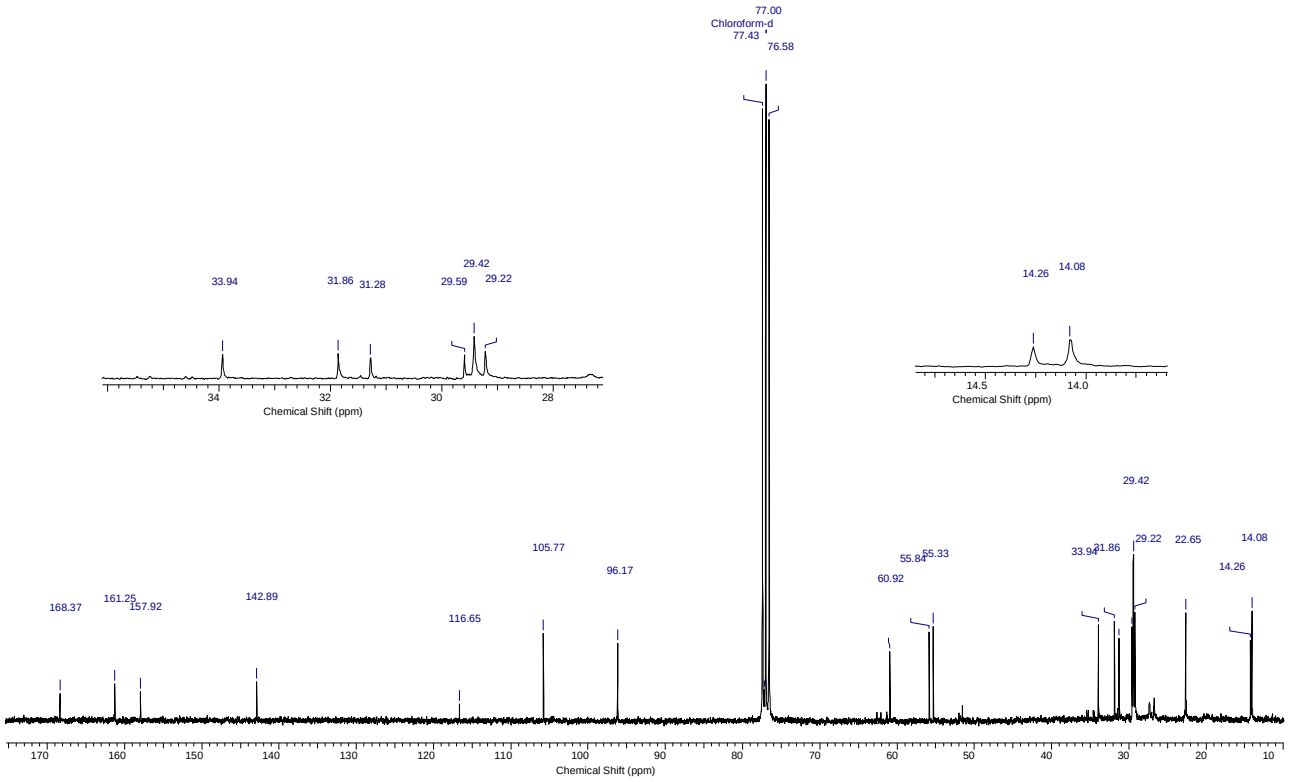


Figure S6. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **1**.

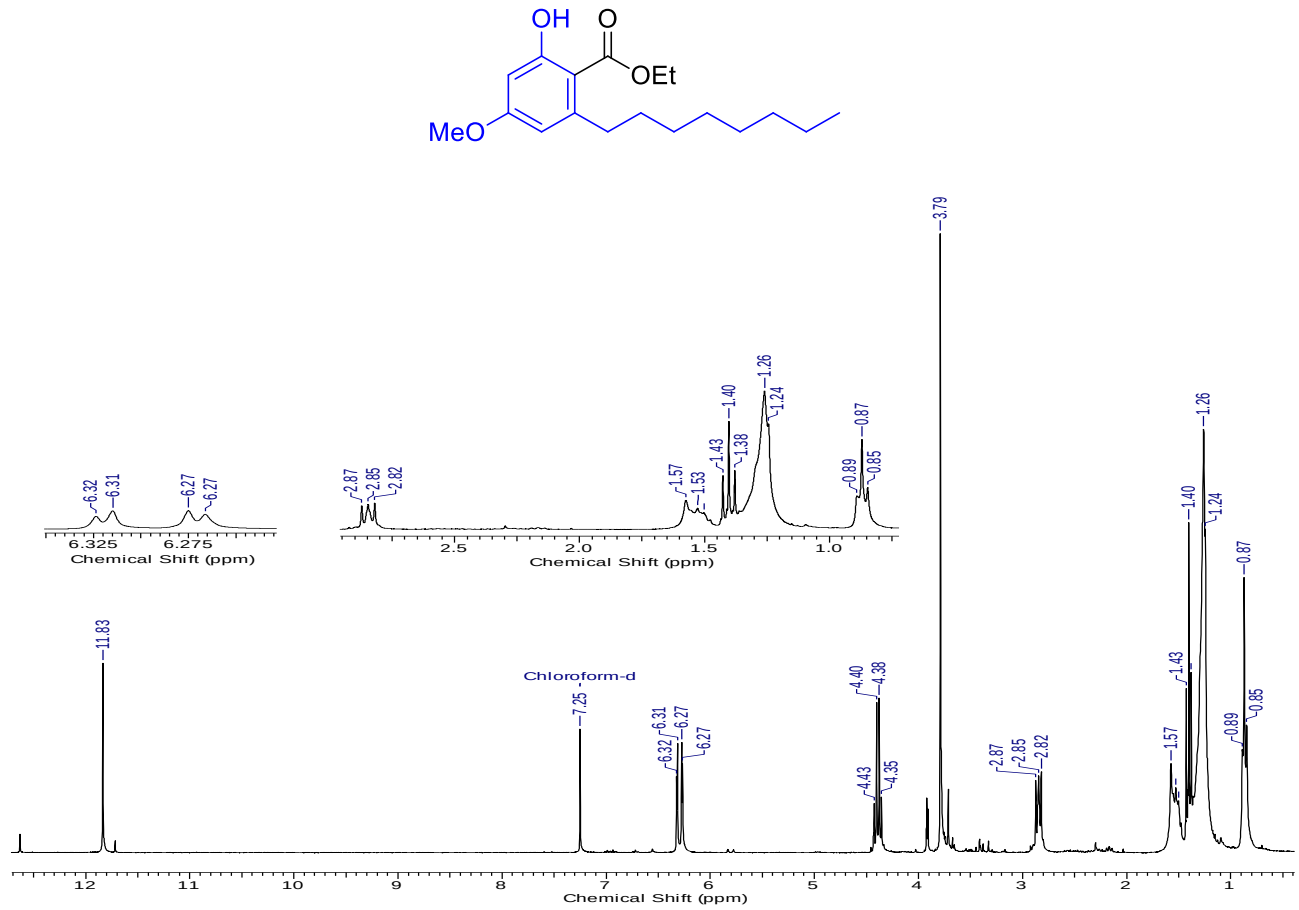


Figure S7. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **2**.

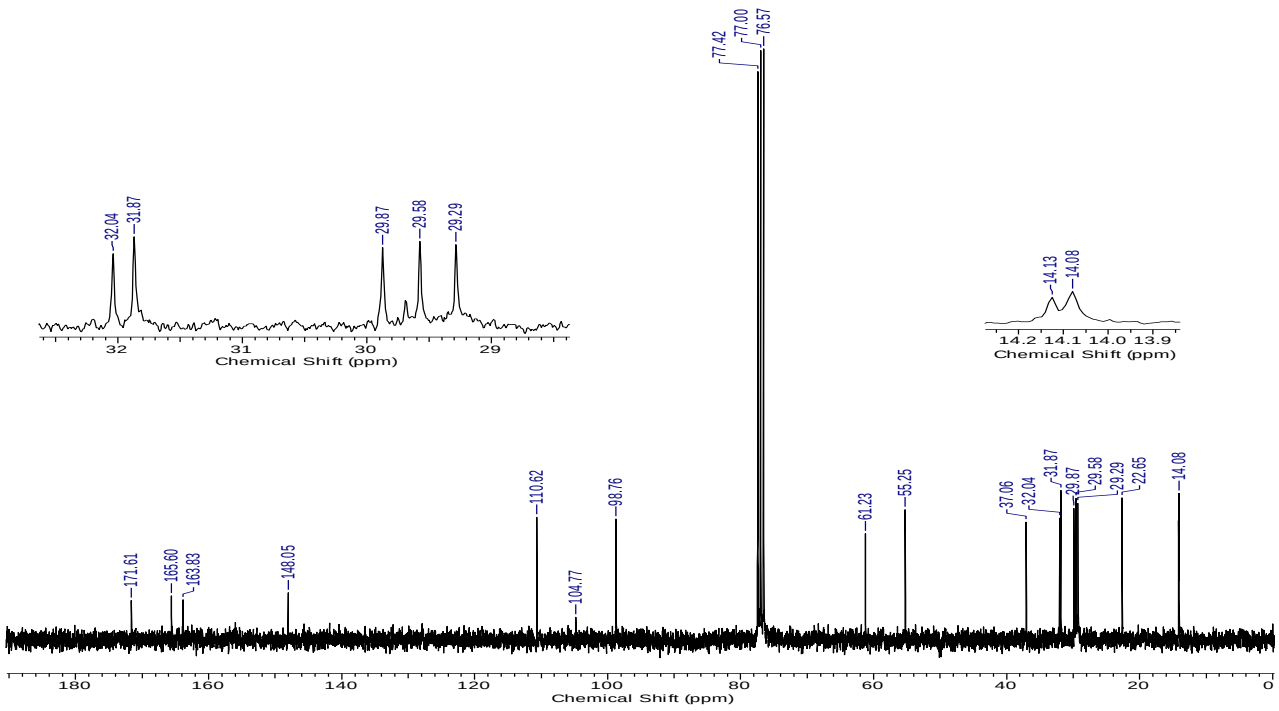


Figure S8. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **2**.

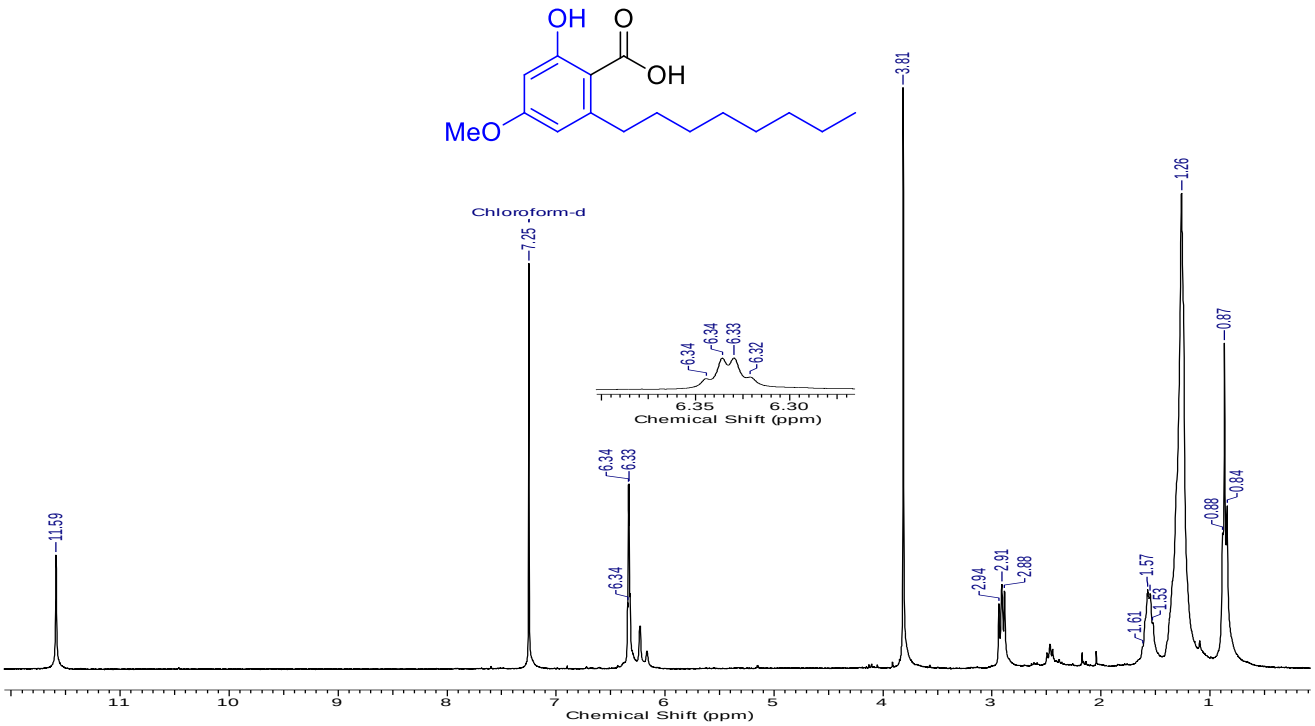


Figure S9. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of **3**.

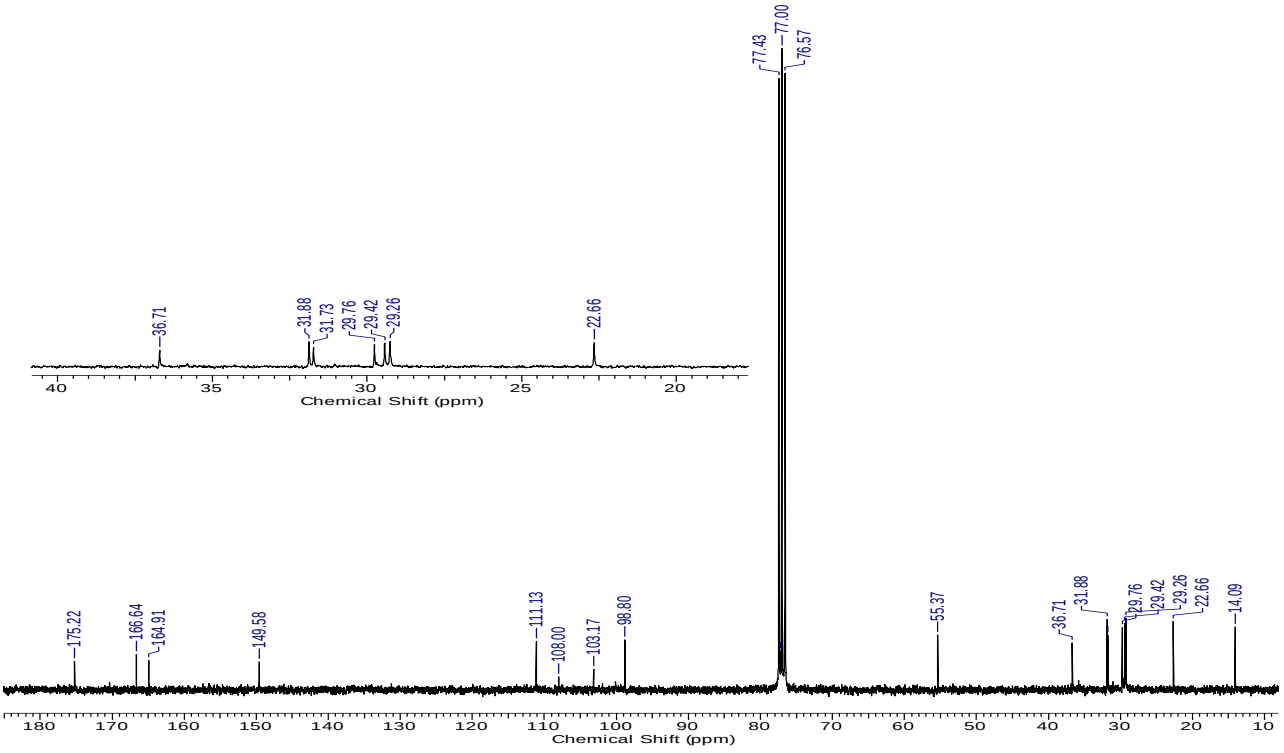


Figure S10. ^{13}C NMR spectrum (75 MHz, $CDCl_3$) of **3.**