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Supplementary Information

Microwave Irradiation or Low Temperature Improved Synthesis of Antiparasitic Morita-Baylis-Hillman Adducts

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Experimental

General

All commercially available reagents and solvent were obtained from the commercial providers and used without further purification. Reactions were monitored by TLC (thin layer chromatography) using Silica gel 60 UV254 Macherey-Nagel pre-coated silica gel plates; detection was by means of a UV lamp. Flash column chromatography was performed on 300-400 mesh silica gel. Organic layers were dried over anhydrous $MgSO_4$ or Na_2SO_4 prior to evaporation on a rotary evaporator. Reactions requiring microwave irradiation were performed in a microwave reactor model system Discover benchmate with temperature monitored by built-in infrared sensor. ^1H and ^{13}C nuclear magnetic resonance (NMR) spectra were recorded using Varian Mercury Spectra AC 20 spectrometer (200 MHz for ^1H, 50 MHz for ^{13}C). Chemical shifts were reported relative to internal tetramethylsilane (δ 0.00 ppm) for ^1H, and $CDCl_3$ (δ 77.0 ppm) for ^{13}C. Fourier transform infrared (FT-IR) spectra were recorded on a Shimadzu spectrophotometer model IRPrestige-21 in KBr pellets. Mass spectrometric analysis was performed on gas chromatography mass spectrometry (GC-MS) analysis (SHIMADZU GCMS-QP2010). The not new Morita-Baylis-Hillman adducts (MBHA) prepared in this report were characterized by ^1H, ^{13}C NMR and FT-IR in accordance with the described physical data.

General procedure for the microwave-assisted synthesis of MBHA

The corresponding aldehydes (0.5 mmol), acrylonitrile (0.2 mL, 3.1 mmol) or methyl acrylate (0.5 mL, 5.3 mmol), 0.5 mL of solvent (see Tables) and DABCO (56 mg, 1 mmol) were placed in a 10 mL glass microwave tube with magnetic stirrer at 80 °C (temperature monitored by built-in infrared sensor) for 1.5-120 min. After the complete reaction, the mixture was brought to room temperature and was directly filtered through silica gel, using hexane/ethyl acetate (7:3) as solvent and the reaction products were concentrated under reduced pressure.

General procedure for the synthesis of MBHA at low temperature

Reactions were carried out using the corresponding aldehydes (0.5 mmol), acrylonitrile (0.2 mL, 3.1 mmol) or methyl acrylate (0.5 mL, 5.3 mmol), 0.5 mL of solvent (see tables) and DABCO (56 mg, 0.5 mmol) at 0 °C under stirrer for the time indicated in Tables 2 and 4. After that, the reaction media was directly filtered through silica gel, using hexane/ethyl acetate (7:3) as solvent and the reaction products were concentrated under reduced pressure.

*2-[(Hydroxyphenyl)methyl] acrylonitrile (**3a**)*

IR (KBr) ν_{max}/cm^{-1} 3444, 2229; ^1H NMR (200 MHz, $CDCl_3$) δ 7.42-7.37 (m, 5H), 6.13 (d, 1H, *J* 1.6 Hz), 6.06 (d, 1H, *J* 1.6 Hz), 5.33 (m, 1H), 2.24 (d, 1H, *J* 4.0 Hz); ^{13}C NMR (50 MHz, $CDCl_3$) δ 139.3, 130.1, 129.1, 129.1, 126.7, 126.3, 117.1, 74.2.

*2-[Hydroxy(2-nitrophenyl)methyl] acrylonitrile (**3b**)*

IR (KBr) ν_{max}/cm^{-1} 3345, 2228, 1348, 1609, 1520; ^1H NMR (200 MHz, $CDCl_3$) δ 8.01 (dd, 1H, *J* 8.0/1.4 Hz), 7.84 (dd, 1H, *J* 6.0/1.8), 7.72 (ddd, 1H, *J* 8.0/1.8/1.4 Hz), 7.52 (ddd, 1H, *J* 8.0/1.6/1.4 Hz), 6.12 (d, 1H, *J* 1.4 Hz), 6.09 (d, 1H, *J* 1.2 Hz), 5.98 (s, 1H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 69.1, 116.5, 124.3, 125.1, 129.1, 129.7, 132.0, 134.2, 134.3, 147.9.

*2-[Hydroxy(3-nitrophenyl)methyl] acrylonitrile (**3c**)*

IR (KBr) ν_{max}/cm^{-1} 3345, 3105, 2239, 1583, 1520, 1348; ^1H NMR (200 MHz, $CDCl_3$) δ 8.24 (dd, 1H, *J* 1.8/1.6 Hz),

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8.18 (ddd, 1H, *J* 8.0/1.0/1.2 Hz), 7.57 (t, 1H, *J* 8.0 Hz), 7.75 (ddd, 1H, *J* 7.8/1.6 Hz), 6.09 (d, 1H, *J* 0.8 Hz), 6.20 (d, 1H, *J* 1.6 Hz), 5.43 (s, 1H), 3.02 (br s, 1H, CHOH); ^{13}C NMR (50 MHz, $CDCl_3$) δ 72.7, 116.3, 121.1, 123.4, 125.0, 129.7, 131.5, 132.5, 141.2, 148.0.

*2-[Hydroxy(4-nitrophenyl)methyl] acrylonitrile (**3d**)*

IR (KBr) ν_{max}/cm^{-1} 3447, 3115, 2228, 1599, 1520, 1348, 736; ^{1}H NMR (200 MHz, $CDCl_3$) δ 8.21(d, 2H, *J* 8.8 Hz), 7.58 (d, 2H, *J* 9.0 Hz), 6.07 (d, 1H, *J* 0.8 Hz), 6.16 (d, 1H, *J* 0.6 Hz), 5.42 (s, 1H), 3.23 (br s, 1H, CHOH); ^{13}C NMR (50 MHz, $CDCl_3$) δ 73.0, 116.6, 123.9, 126.1, 127.3, 130.5, 146.8, 147.8.

*2-[Hydroxy(pyridin-2-yl)methyl] acrylonitrile (**3e**)*

IR (film) ν_{max}/cm^{-1} 3200, 2225, 1600; ^{1}H NMR (200 MHz, $CDCl_3$) δ 8.56 (ddd, 1H, *J* 8.0/1.4 Hz), 7.75 (ddd, 2H, *J* 7.8/7.6/1.6 Hz), 7.37 (d, 1H, *J* 7.8 Hz), 7.29 (ddd, 1H, *J* 0.8/1.0/1.2 Hz), 5.28 (s,1H), 6.21 (s, 1H), 6.05 (s, 1H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 72.9, 116.7, 121.2, 123.7, 125.8, 130.9, 137.4, 148.5, 156.0.

*2-[Hydroxy(pyridin-3-yl)methyl] acrylonitrile (**3f**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 8.41 (m, 2H), 7.79 (ddd, 1H, *J* 7.8/1.8/1.6 Hz), 7.33 (dd, 1H, *J* 8.0 Hz), 6.05 (d, 1H, *J* 1.0 Hz), 6.17 (d, 1H, *J* 1.2), 5.33 (s, 1H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 71.5, 116.7, 124.1, 126.0, 130.4, 135.0, 136.1, 147.4, 148.9.

*2-[Hydroxy(pyridin-4-yl)methyl] acrylonitrile (**3g**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 8.50 (d, 2H, *J* 6 Hz), 7.36 (d, 2H, *J* 5.8 Hz), 5.31(s, 1H), 6.16 (d, 1H, *J* 0.6 Hz), 6.06 (s, 1H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 72.5, 116.5, 121.4, 125.7, 130.6, 149.1, 149.6.

*2-[hydroxy (4-fluorphenyl) methyl] acrylonitrile (**3h**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 7.39 (dd, 2H, *J* 8.4, 5.2 Hz), 7.10 (t, 2H, *J* 8.4 Hz), 6.13 (d, 1H, *J* 1.2 Hz), 6.06 (d, 1H, *J* 1.2 Hz), 5.32 (d, 1H, *J* 4.0 Hz), 2.31 (d, 1H, *J* 4.0 Hz); ^{13}C NMR (50 MHz, $CDCl_3$) δ 163.1, 135.2, 130.2, 128.5, 126.3, 117.0, 116.0, 73.6.

*2-[hydroxyl (4-chlorophenyl) methyl] acrylonitrile (**3i**)*

IR (KBr) ν_{max}/cm^{-1} 3441, 2229; ^{1}H NMR (200 MHz, $CDCl_3$) δ 7.39 (2H, *J* 8.8 Hz), 7.35 (2H, *J* 8.8 Hz), 6.13 (d, 1H, *J* 1.6 Hz), 6.06 (d, 1H, *J* 1.6 Hz), 5.32 (m, 1H), 2.30 (d, 1H, *J* 4.0 Hz); ^{13}C NMR (50 MHz, $CDCl_3$) δ 137.8, 135.1, 130.3, 129.3, 128.1, 126.1, 116.9, 73.7.

*2-[Hydroxy(4-bromophenyl)methyl] acrylonitrile (**3j**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 7.54 (dd, 2H, *J* 6.0/2.0 Hz), 7.28 (dd, 2H, *J* 6.0/1.8 Hz), 6.11 (d, 1H, *J* 1.6 Hz), 6.04 (d, 1H, *J* 1.0 Hz), 5.27 (s, 1H), 2.71 (s, CHOH); ^{13}C NMR (50 MHz, $CDCl_3$) δ 73.3, 116.7, 122.7, 125.8, 128.1, 130.3, 131.9, 138.1.

*2-[Hydroxy(naphth-2-yl)methyl] acrylonitrile (**3k**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 7.42-7.89 (m, 7H), 6.15 (d, 2H, *J* 1.4 Hz), 6.06 (d, 2H, *J* 1.6 Hz), 5.46 (d, 1H, *J* 3.8 Hz), 2.50 (d, 1H, *J* 3.8 Hz); ^{13}C NMR (50 MHz, $CDCl_3$) δ 137.8, 134.9, 134.5, 131.6, 130.4, 129.6, 129.18, 129.16, 128.0, 127.5, 127.4 , 125.2, 118.4, 75.9.

*2-[hydroxyl (1,3-dioxolephenyl) methyl] acrylonitrile (**3l**)*

IR (KBr) ν_{max}/cm^{-1} 3471, 2225; ^{1}H NMR (200 MHz, $CDCl_3$) δ 6.9-6.6 (m, 3H) 6.1 (d, 1H, *J* 1.46 Hz), 6.0 (d, 1H, *J* 1.46 Hz), 5.82 (s, 2H), 5.20 (s, 1H), 2.6 (s, 1H).

*Methyl 2-[(hydroxylphenyl)methyl] acrylate (**6a**)*

IR (KBr) ν_{max}/cm^{-1} 3344, 1716; ^{1}H NMR (200 MHz, $CDCl_3$) δ 7.40–7.29 (m, 5H), 6.34 (s, 1H), 5.83 (s, 1H), 5.58 (d, 1H, *J* 5.6 Hz), 3.73 (s, 3H), 2.98 (d, 1H, *J* 5.6 Hz); ^{13}C NMR (50 MHz, $CDCl_3$) δ 166.9, 142.2, 141.5, 128.6, 128.0, 126.8, 126.2, 73.3, 52.1.

*Methyl 2-[hydroxyl (2-nitrophenyl)methyl] acrylate (**6b**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 8.82 (d, 1H, *J* 8.47 Hz), 8.56 (t, 1H, *J* 7.55/7.35 Hz), 8.42 (t, 1H, *J* 8.47/ 7.35 Hz), 8.33 (d, 1H *J* 8.47 Hz), 6.36 (s, 1H), 6.31 (s, 1H), 5.59 (d, 1H, *J* 5.3 Hz, CHOH), 3.74 (s, 3 H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 52.2, 67.6, 124.6, 126.5, 128.7, 133.5, 136.0, 140.7, 148.3, 166.4.

*Methyl 2-[hydroxyl(3-nitrophenyl)methyl] acrylate (**6c**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 8.48 (d, 1H, *J* 2.0 Hz), 8.39 (dd, 1H, *J* 5.0/1.5 Hz), 7.74 (ddd, 1H, *J* 8.0/2.0/2.0 Hz), 7.28 (m, 1H), 6.40 (d, 1H, *J* 0.6), 6.01 (sl, 1H); 5.60 (sl, 1H), 3,71 (s, 3H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 52.0, 70.5, 123.4, 126.1, 134.7, 137.6, 141.6, 148.2, 148.4, 166.2.

*Methyl 2-[hydroxyl(4-nitrophenyl)methyl]acrylate (**6d**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 1.57 (s, 1H), 3.74 (s, 3H), 5.63 (d, 1H, *J* 6.32 Hz), 5.87 (s, 1H), 6.40 (s, 1H), 7.61 (m, 2H), 8.25 (m, 2H); ^{13}C NMR (50 MHz,$CDCl_3$) δ 52.1, 72.5, 123.5, 127.1, 127.2, 140.9, 147.3, 148.5, 166.2.

*Methyl 2-[hydroxyl(2-pyridinyl)methyl] acrylate (**6e**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 8.51 (d, 1H, *J* 4.4 Hz), 7.66 (ddd, 1H, *J* 7.8/1.6 Hz), 7.4 (d, 1H, *J* 8.0 Hz), 7.21 (m, 1H), 6.34 (sl, 1H), 5.96 (sl, 1H), 5.61 (sl, 1H), 3.71 (s, 3H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 51.8, 72.0, 121.2, 122.6, 126.8, 136.8, 141.5, 148.1, 159.4, 166.4.

*Methyl 2-[hydroxyl(3-pyridinyl)methyl] acrylate (**6f**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 8.48 (d, 1H, *J* 2.0 Hz), 8.39 (dd, 1H, *J* 5.0/1.5 Hz), 7.74 (ddd, 1H, *J* 8.0/2.0/2.0 Hz), 7.28 (m, 1H), 6.40 (d, 1H, *J* 0.6), 6.01(sl, 1H), 5.60 (sl, 1H), 3.71 (s, 3H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 52.0, 70.5, 123.4, 126.1, 134.7, 137.6, 141.6, 148.2, 148.4, 166.2.

*Methyl 2-[hydroxyl (4-pyridinyl)methyl] acrylate (**6g**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 8.47 (dd, 2H, *J* 4.6/1.6 Hz), 7.30 (dd, 2H, *J* 4.6/1.6 Hz), 5.89 (s, 1H), 5.51 (s, 1H), 3.70 (s, 1H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 52.1, 71.9, 121.5, 127.1, 140.9, 149.3, 151.0, 166.3.

*Methyl 2-[hydroxyl (4-fluorphenyl)methyl] acrylate (**6h**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 7.35 (dd, 2H, *J* 8.8, 6.0 Hz), 7.03 (t, 2H, *J* 8.8 Hz), 6.34 (s, 1H), 5.82 (s, 1H), 5.55 (d, 1H, *J* 5.6 Hz), 3.74 (s, 3H), 2.99 (d, 1H, *J* 5.6 Hz); ^{13}C NMR (50 MHz, $CDCl_3$) δ 166.9, 162.6, 142.1, 137.2, 128.5, 126.3, 115.5, 72.9, 52.2.

*Methyl 2-[hydroxyl (4-chlorophenyl)methyl] acrylate (**6i**)*

IR (KBr) ν_{max}/cm^{-1} 3255, 1720; ^{1}H NMR (200 MHz, $CDCl_3$) δ 7.32 (s, 4H), 6.35 (s, 1H), 5.82 (s, 1H), 5.54 (d, 1H, *J* 6.0 Hz), 3.74 (s, 3H), 3.03 (d, 1H, *J* 6.0 Hz); ^{13}C NMR (50 MHz, $CDCl_3$) δ 166.8, 141.8, 140.0, 133.8, 128.8, 128.2, 126.6, 72.9, 52.3.

*Methyl 2-[hydroxyl(4-bromophenyl)methyl] acrylate (**6j**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 7.38 (d, 2H, *J* 8.4 Hz), 7.16 (d, 2H, *J* 8.4 Hz), 6.26 (s, 1H), 5.78 (s, 1H), 5.41 (s, 1H), 3.63 (s, 3H), 3.39 (bs, 1H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 166.4, 141.5, 140.3, 131.3, 128.3, 126.1, 121.6, 72.3, 51.9.

Methyl 2-[hydroxyl(2-naphthyl)methyl] acrylate (6k)

^{1}H NMR (200 MHz, $CDCl_3$) δ 1.57 (s, 1H), 3.73 (s, 3H), 5.75 (d, 1H, *J* 5.77 Hz), 5.88 (t, 1H, *J* 1.14 / 1.10 Hz), 6.39 (s, 1H), 7.50 (m, 3H), 7.78 (m, 4H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 51.9, 73.2, 124.5, 125.4, 125.9, 126.0, 126.8, 127.5, 128.0, 128.1, 132.9, 133.1, 138.5, 141.8, 166.7.

*Methyl 2-[hydroxyl(1,3-dioxolephenyl)methyl] acrylate (**6l**)*

^{1}H NMR (200 MHz, $CDCl_3$) δ 1.57 (s, 1H), 3.73 (s, 3H), 5.49 (d, 1H, *J* 5 Hz), 5.86 (t, 1H, *J* 1.26/1.21Hz), 5.96 (d, 2H, *J* 0.86 Hz), 6.33 (t, 1H, *J* 1.09/0.8 Hz), 6.87 (m, 3H); ^{13}C NMR (50 MHz, $CDCl_3$) δ 51.8, 72.7, 100.9, 107.0, 107.9, 120.0, 125.6, 135.2, 141.8, 147.0, 147.5, 166.5.

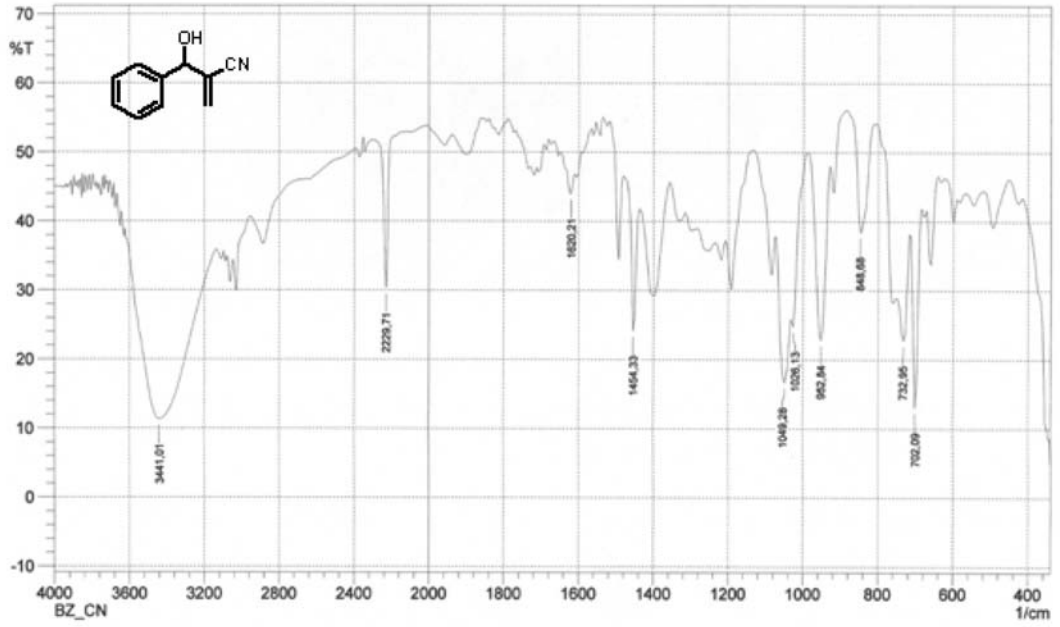

Figure S1. IR (KBr) of 2-[(Hydroxyphenyl)methyl] acrylonitrile (**3a**).

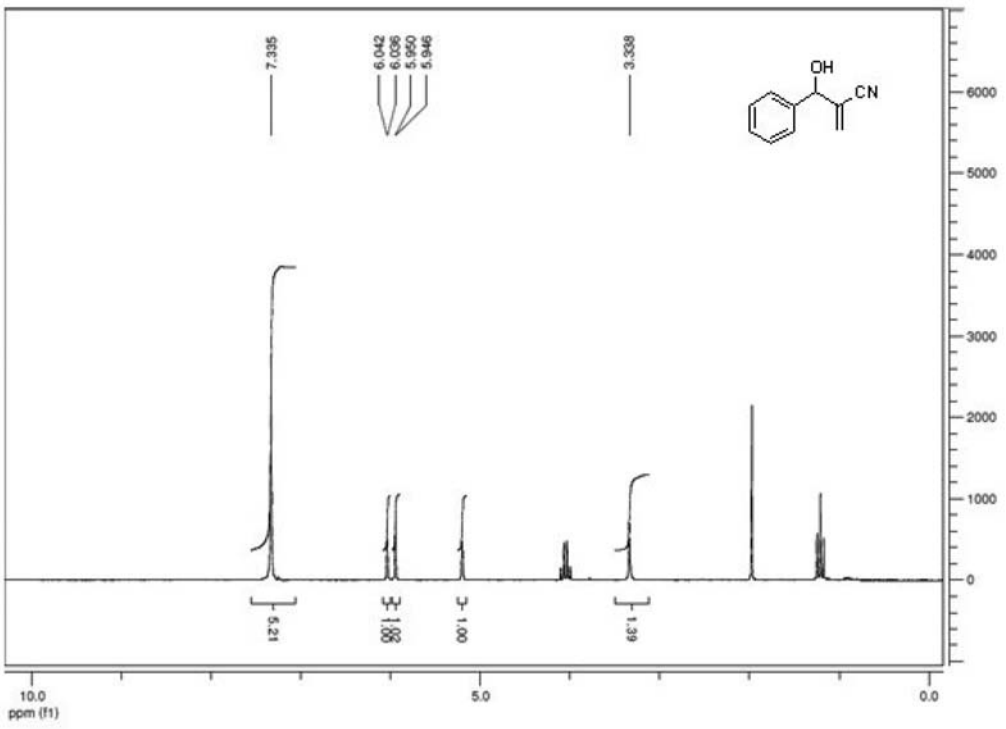

Figure S2. ^{1}H NMR ($CDCl_3$) spectrum of 2-[(Hydroxyphenyl)methyl] acrylonitrile (**3a**).

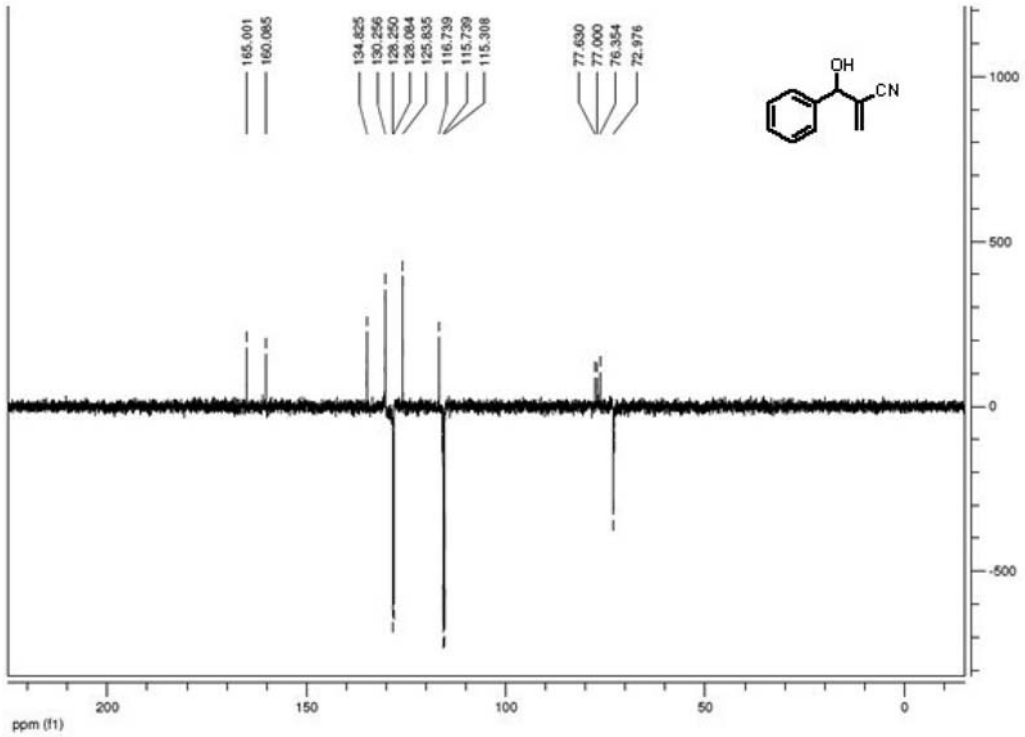

Figure S3. ^{13}C NMR ($CDCl_3$) spectrum of 2-[(Hydroxyphenyl)methyl] acrylonitrile (**3a**).

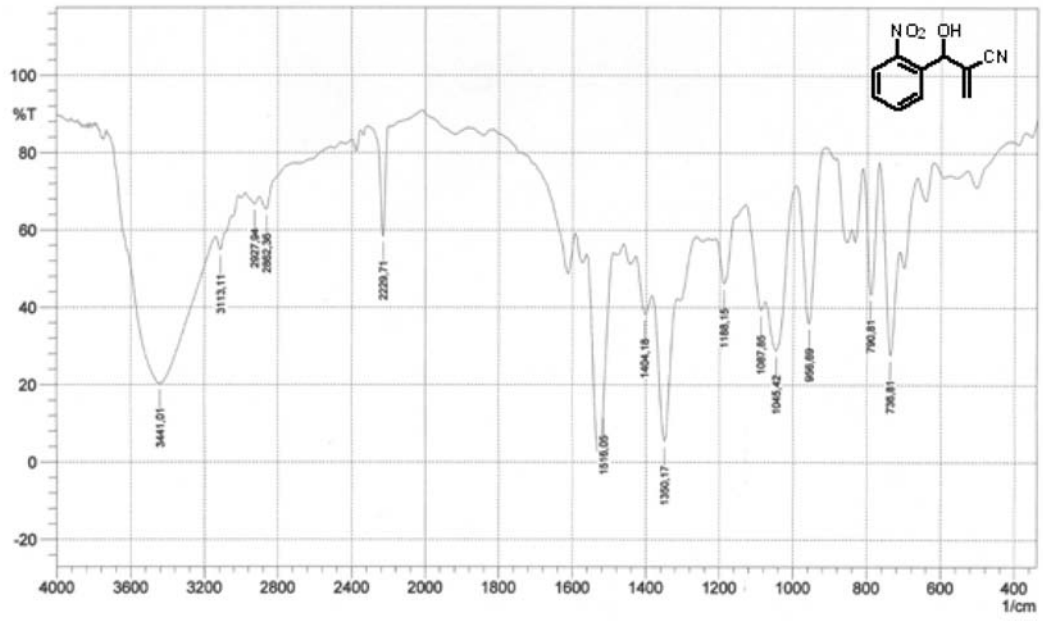

Figure S4. IR (KBr) of 2-[Hydroxy(2-nitrophenyl)methyl] acrylonitrile (**3b**).

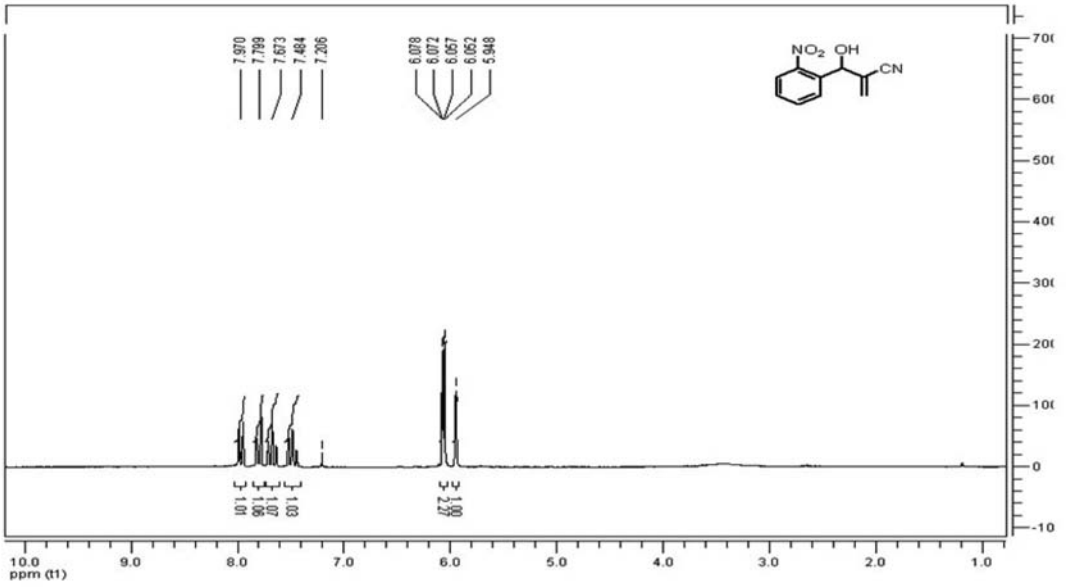

Figure S5. ^{1}H NMR ($CDCl_3$) spectrum of 2-[Hydroxy(2-nitrophenyl)methyl] acrylonitrile (**3b**)

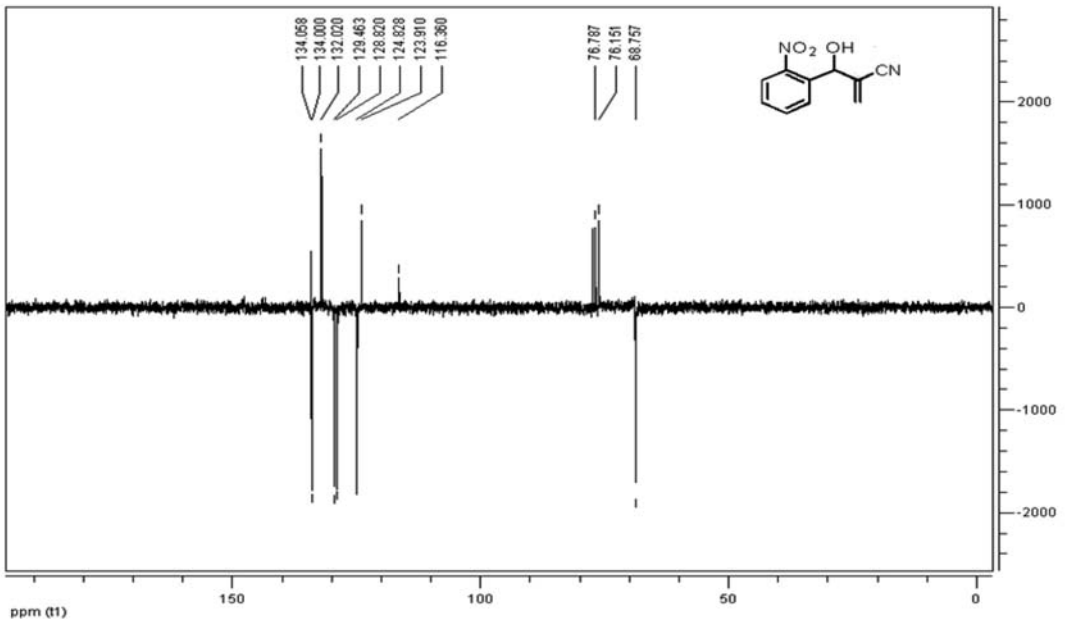

Figure S6. ^{13}C NMR ($CDCl_3$) spectrum of 2-[Hydroxy(2-nitrophenyl)methyl] acrylonitrile (**3b**).

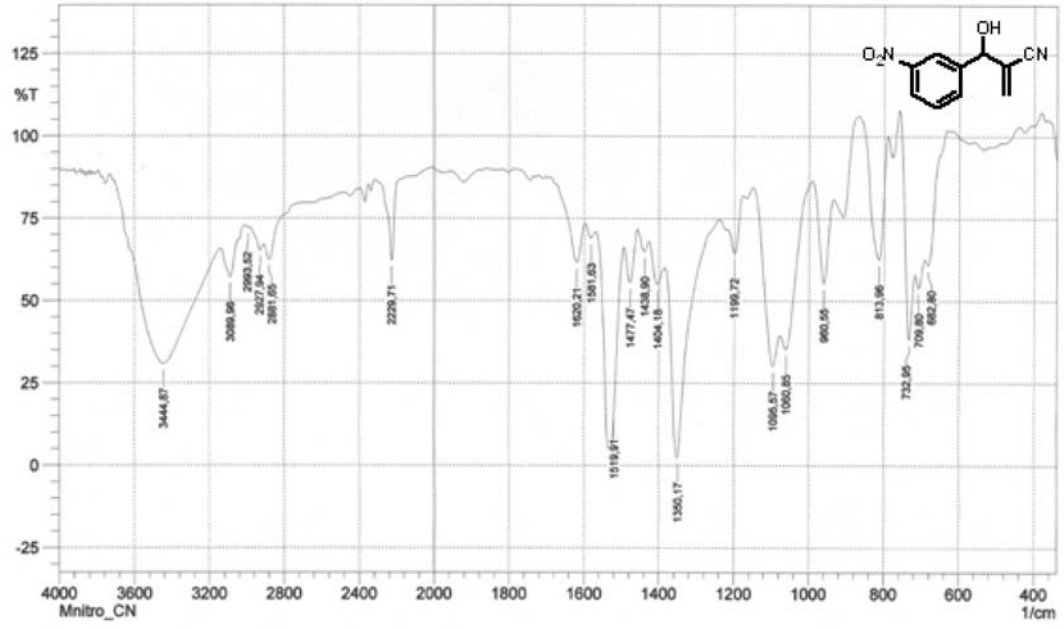

Figure S7. IR (KBr) of 2-[Hydroxy(3-nitrophenyl)methyl] acrylonitrile (**3c**).

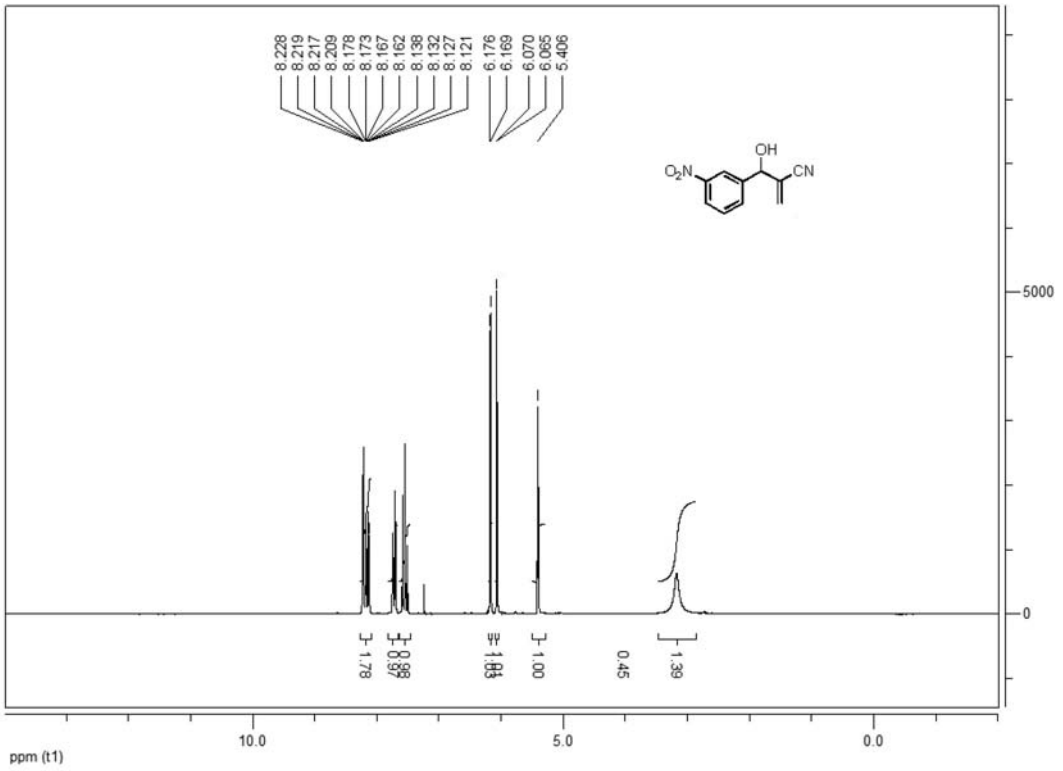

Figure S8. ^{1}H NMR ($CDCl_3$) spectrum of 2-[Hydroxy(3-nitrophenyl)methyl] acrylonitrile (**3c**).

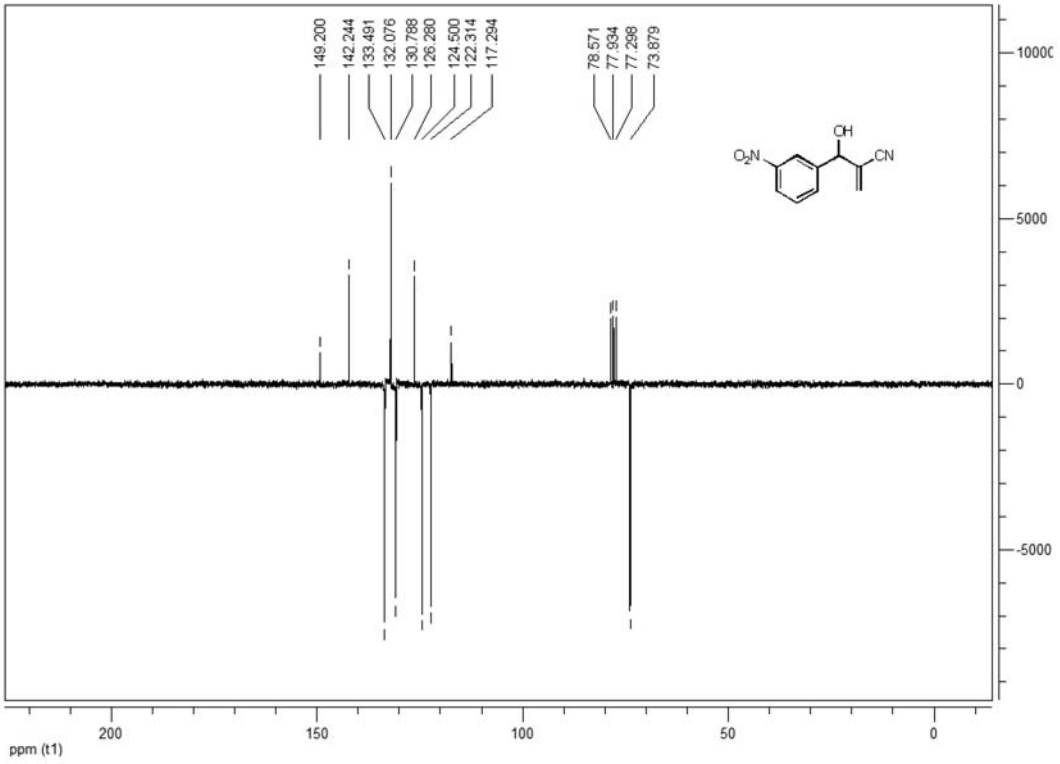

Figure S9. ^{13C} NMR ($CDCl_3$) spectrum of 2-[Hydroxy(3-nitrophenyl)methyl] acrylonitrile (**3c**).

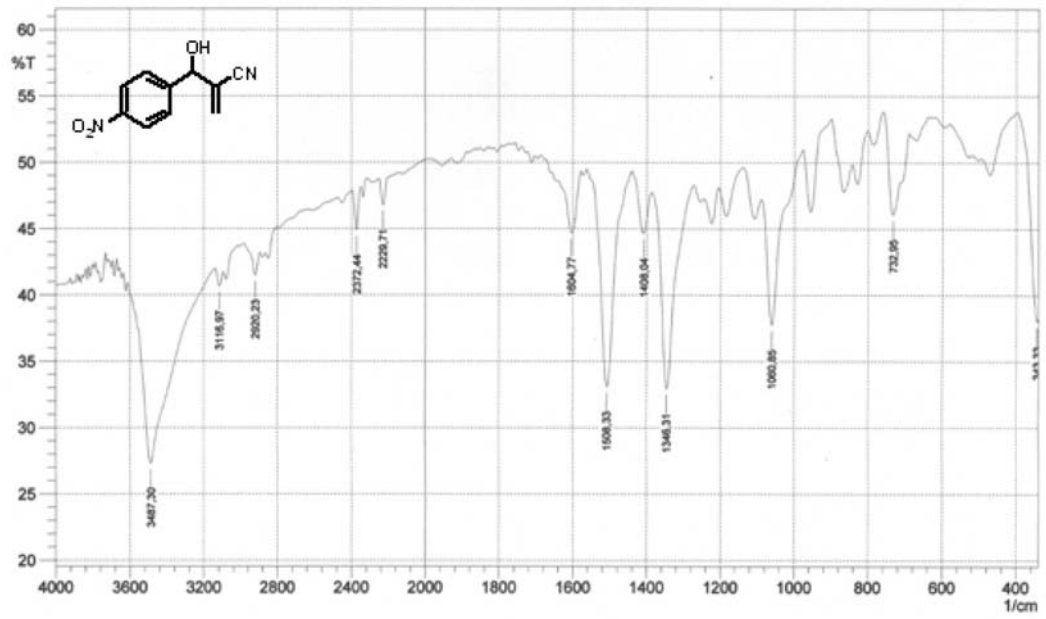

Figure S10. IR (KBr) of 2-[Hydroxy(4-nitrophenyl)methyl] acrylonitrile (**3d**).

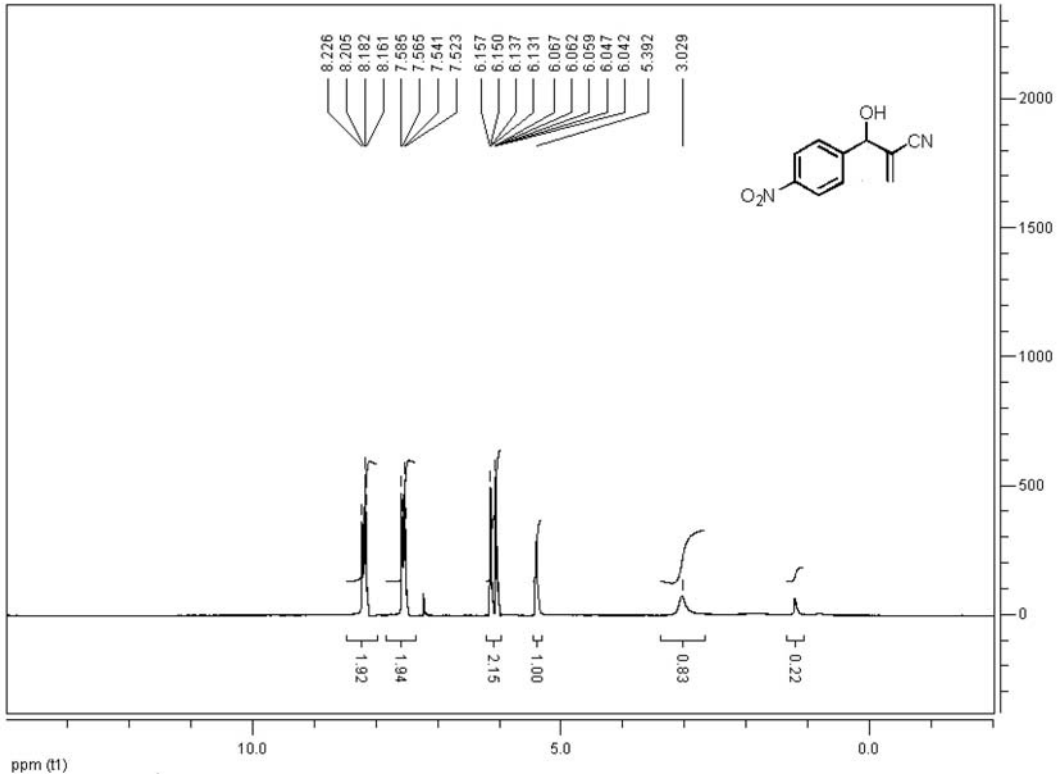

Figure S11. ^{1}H NMR ($CDCl_3$) spectrum of 2-[Hydroxy(4-nitrophenyl)methyl] acrylonitrile (**3d**).

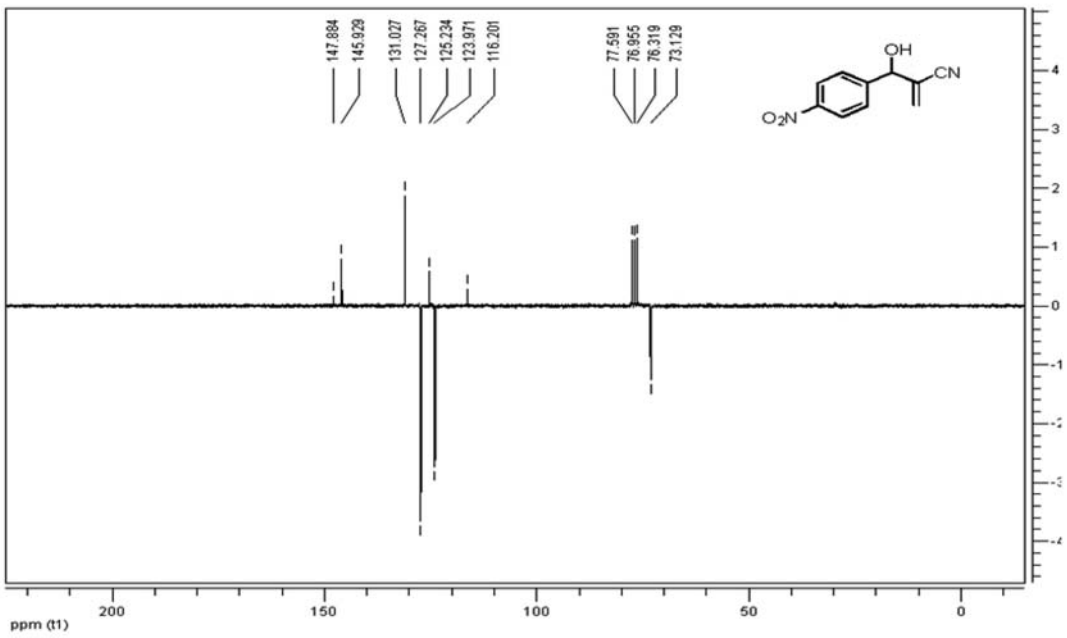

Figure S12. ^{13}C NMR ($CDCl_3$) spectrum of 2-[Hydroxy(4-nitrophenyl)methyl] acrylonitrile (**3d**).

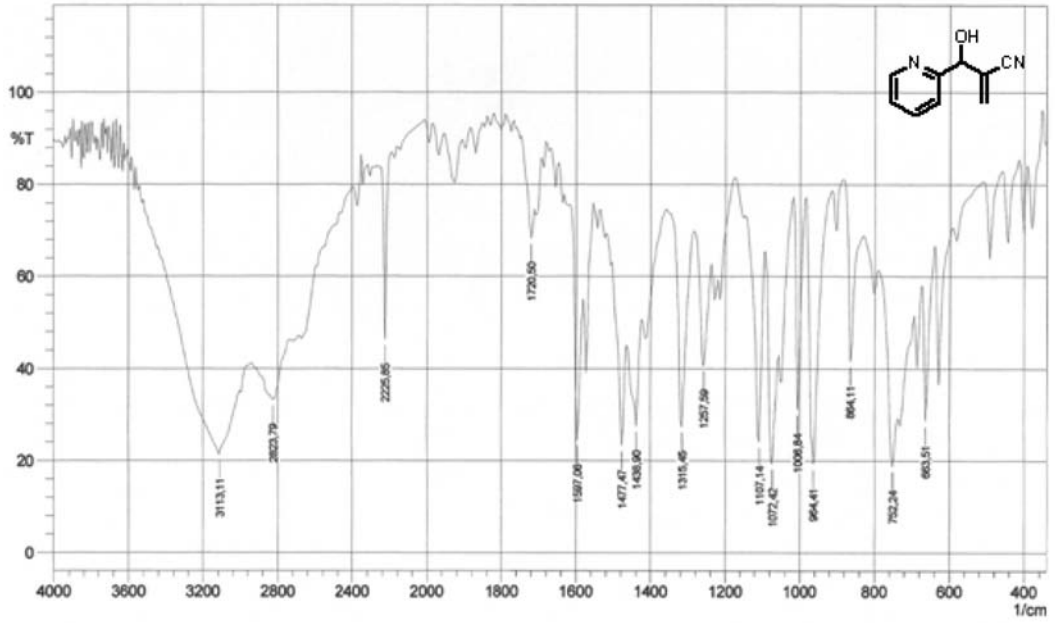

Figure S13. IR (KBr) of 2-[Hydroxy(pyridin-2-yl)methyl] acrylonitrile (**3e**).

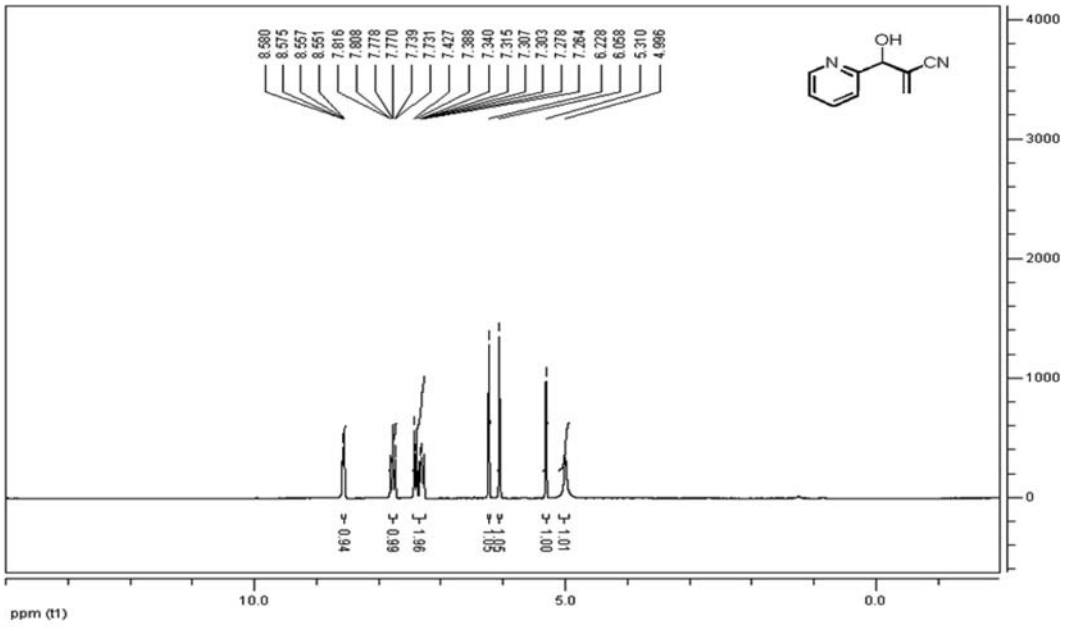

Figure S14. ^{1}H NMR ($CDCl_3$) spectrum of 2-[Hydroxy(pyridin-2-yl)methyl] acrylonitrile (**3e**).

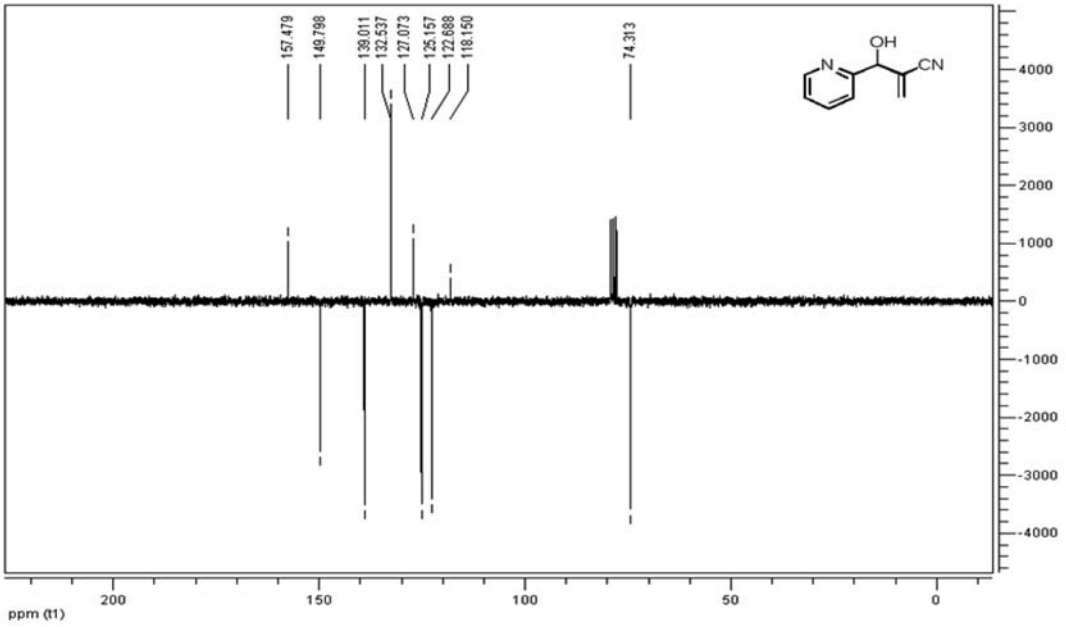

Figure S15. ^{13}C NMR ($CDCl_3$) spectrum of 2-[Hydroxy(pyridin-2-yl)methyl] acrylonitrile (**3e**).

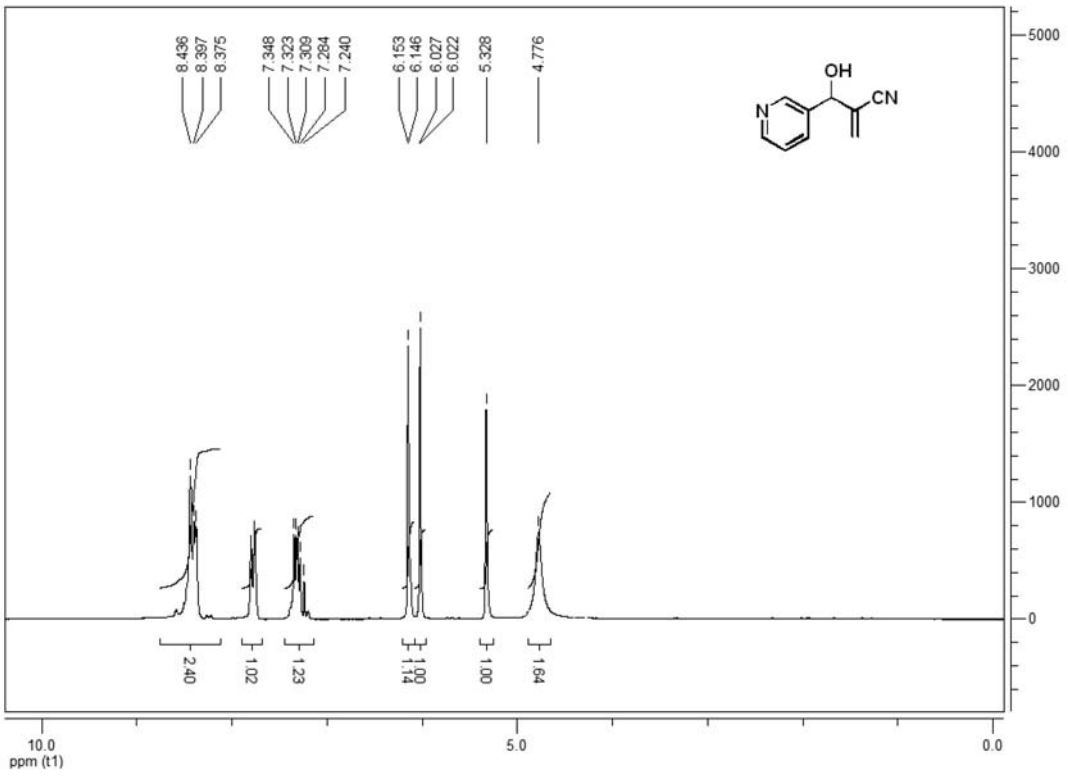

Figure S16. ^{1}H NMR ($CDCl_3$) spectrum of 2-[Hydroxy(pyridin-3-yl)methyl] acrylonitrile (**3f**).

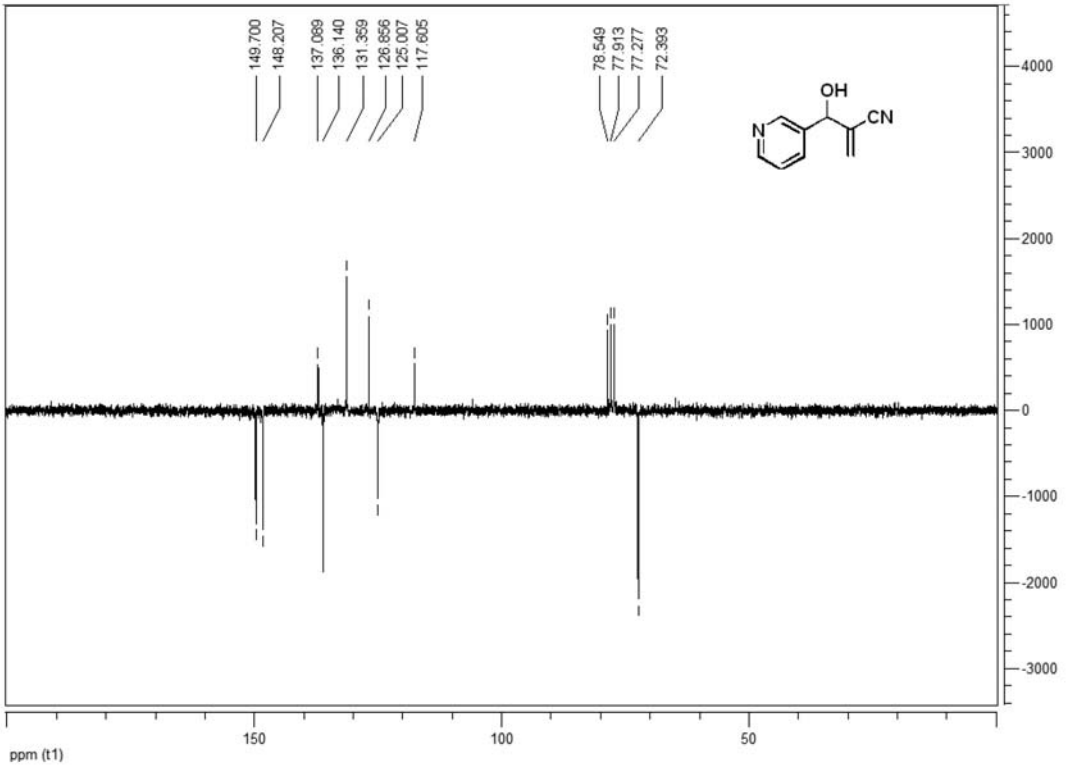

Figure S17. ^{13}C NMR ($CDCl_3$) spectrum of 2-[Hydroxy(pyridin-3-yl)methyl] acrylonitrile (**3f**).

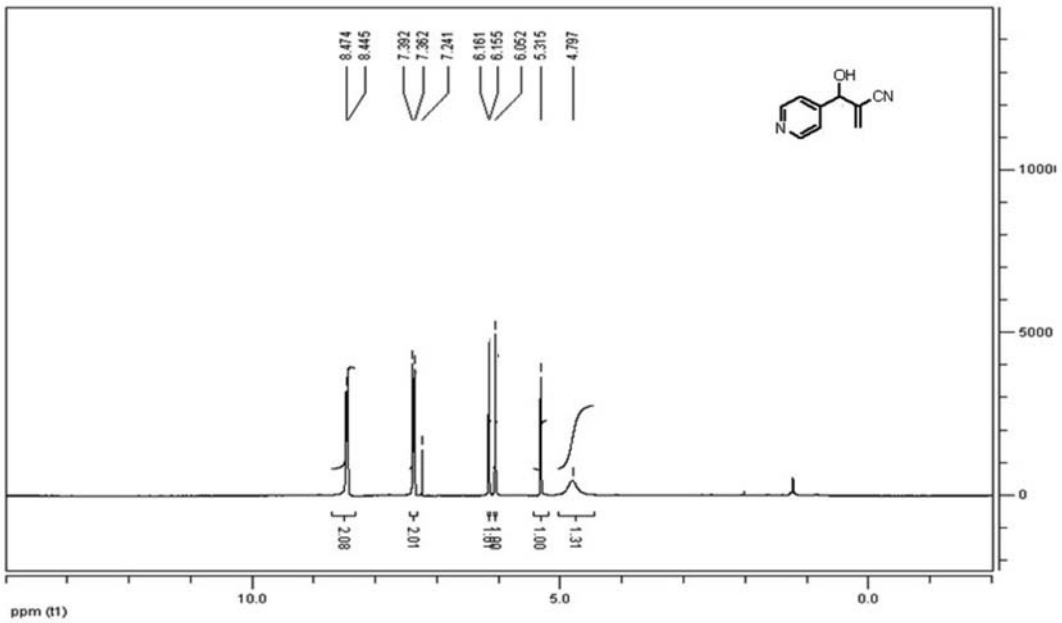

Figure S18. ^{1}H NMR ($CDCl_3$) spectrum of 2-[Hydroxy(pyridin-4-yl)methyl] acrylonitrile (**3g**).

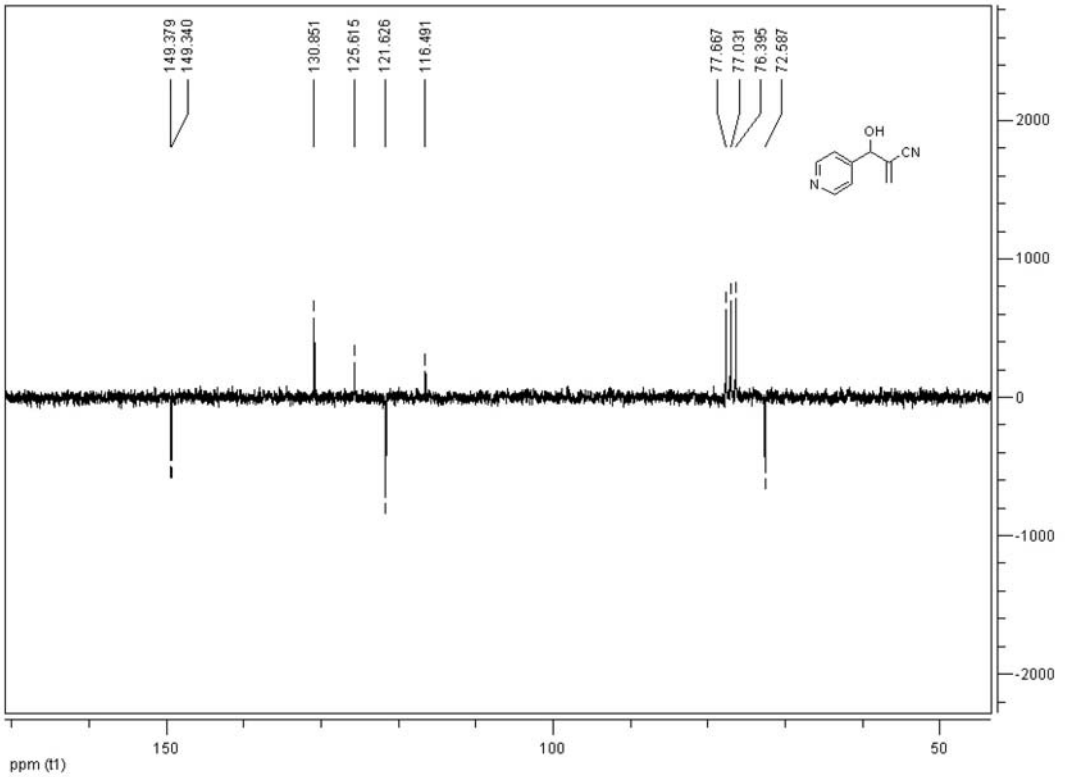

Figure S19. ^{13}C NMR ($CDCl_3$) spectrum of 2-[Hydroxy(pyridin-4-yl)methyl] acrylonitrile (**3g**).

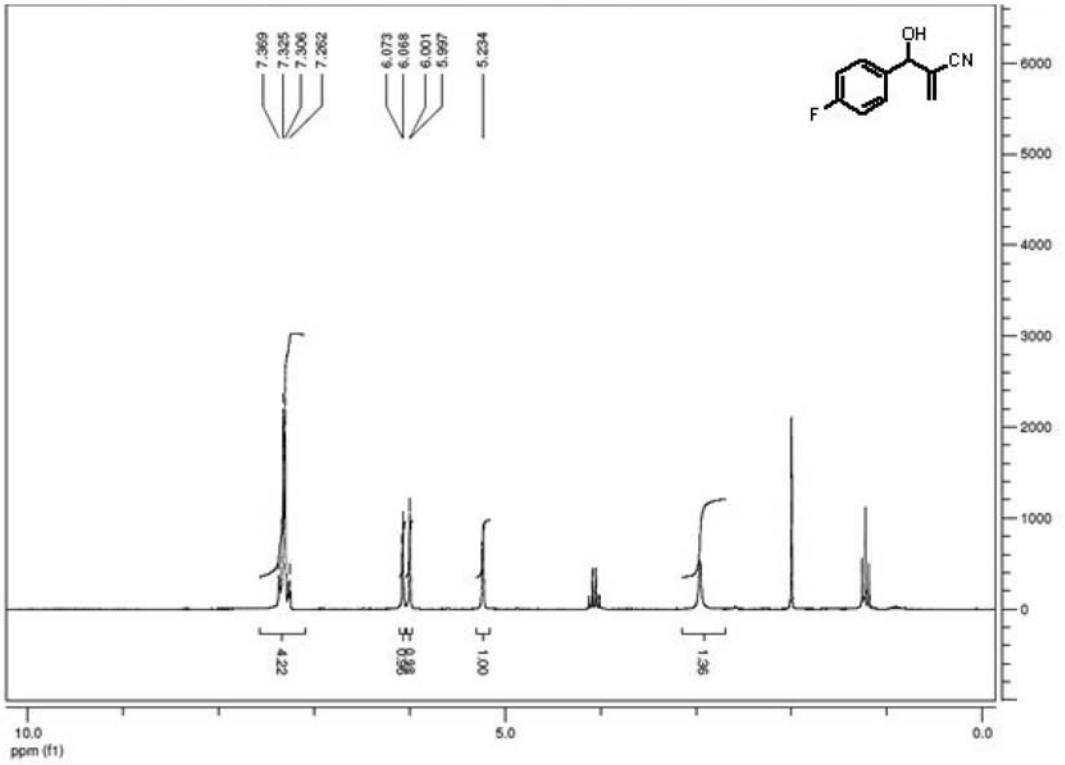

Figure S20. ^{1}H NMR ($CDCl_3$) spectrum of 2-[hydroxy (4-fluorphenyl) methyl] acrylonitrile (**3h**).

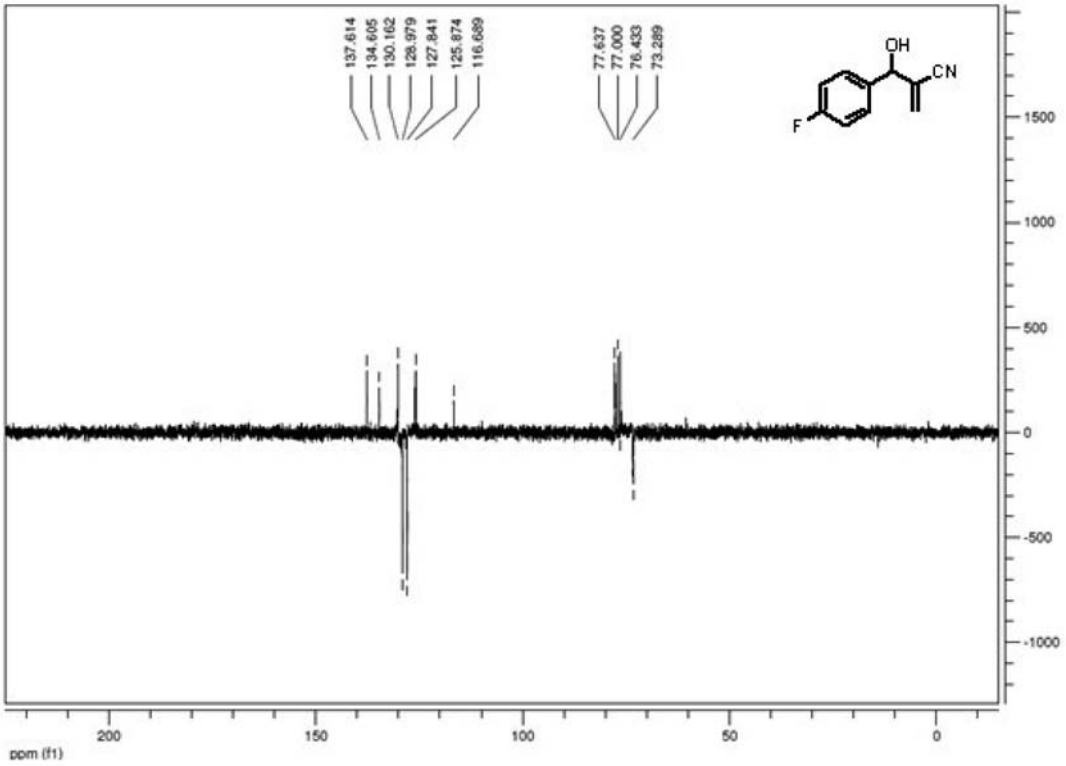

Figure S21. ^{13}C NMR ($CDCl_3$) spectrum of 2-[hydroxy (4-fluorphenyl) methyl] acrylonitrile (**3h**).

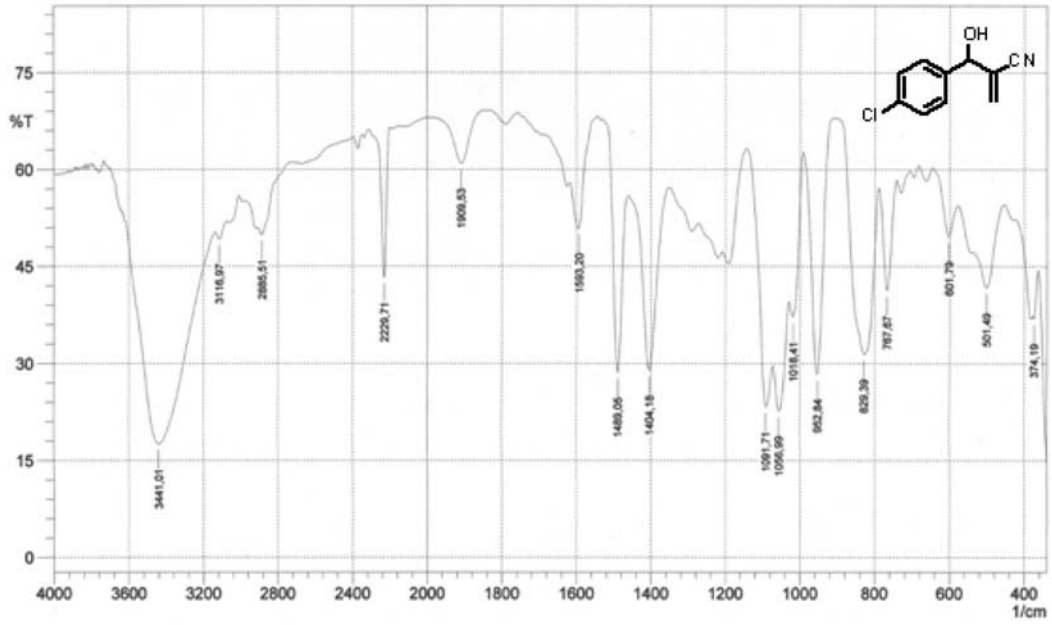

Figure S22. IR (KBr) of 2-[hydroxyl (4-chlorophenyl) methyl] acrylonitrile (**3i**).

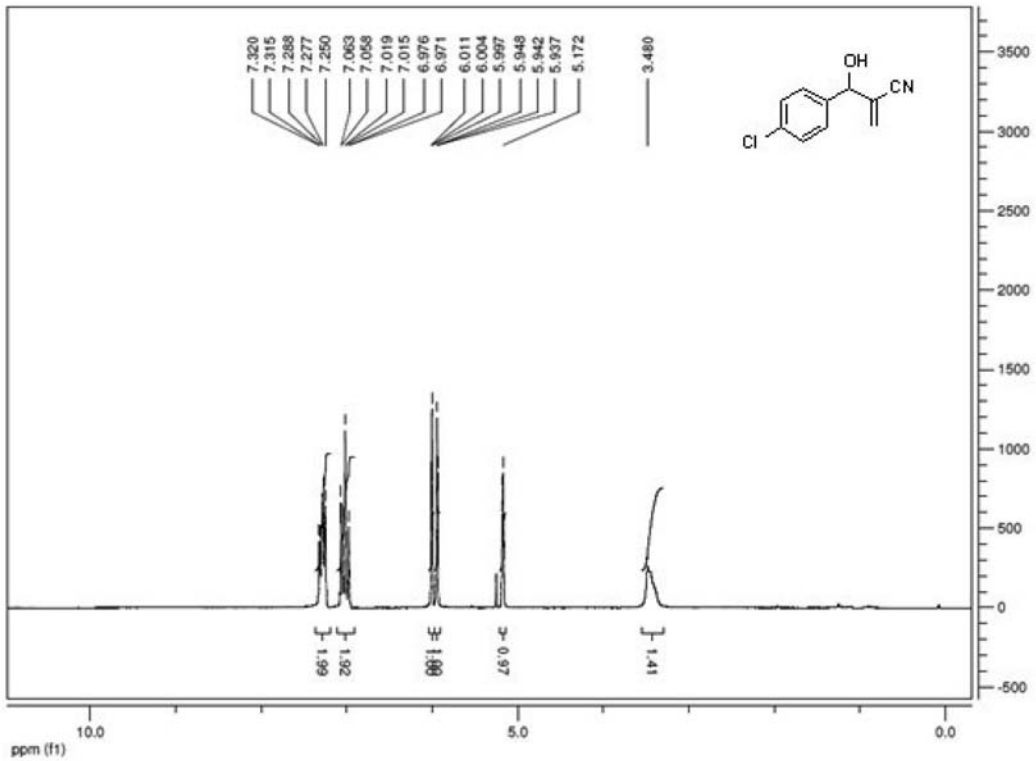

Figure S23. ^{1}H NMR ($CDCl_3$) spectrum of 2-[hydroxyl (4-chlorophenyl) methyl] acrylonitrile (**3i**).

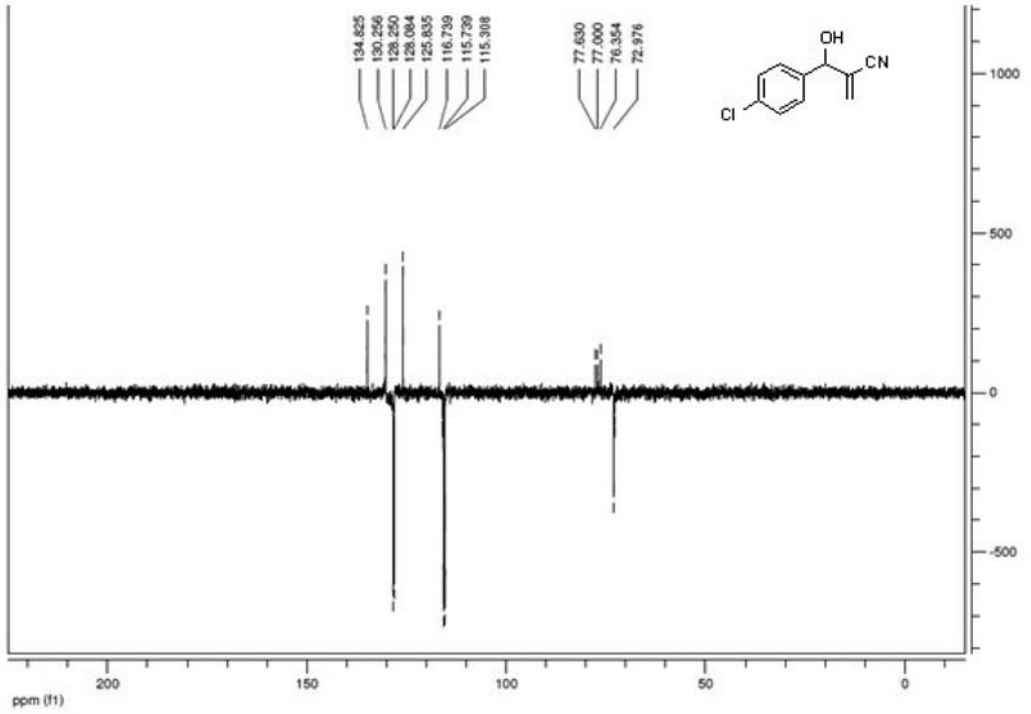

Figure S24. ^{13}C NMR ($CDCl_3$) spectrum of 2-[hydroxyl (4-chlorophenyl) methyl] acrylonitrile (**3i**).

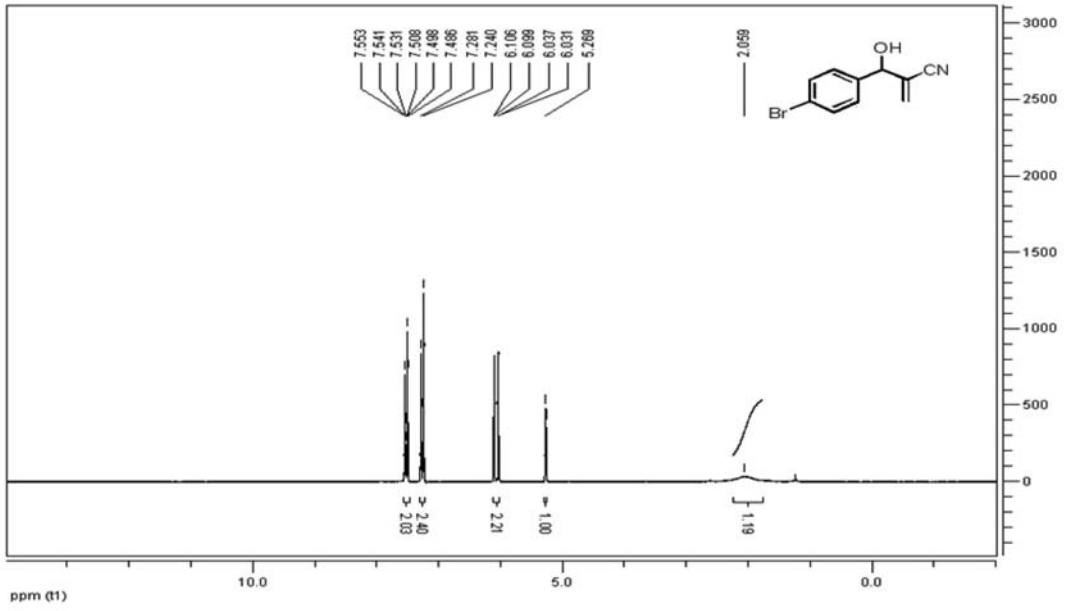

Figure S25. ^{1}H NMR ($CDCl_3$) spectrum of 2-[Hydroxy(4-bromophenyl)methyl] acrylonitrile (**3j**).

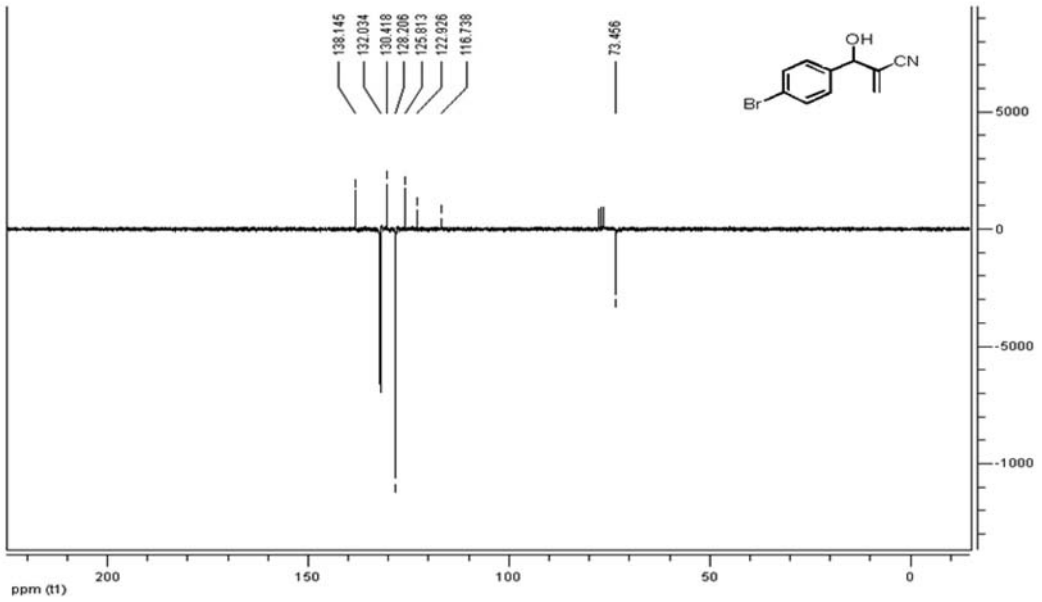

Figure S26. ^{13}C NMR ($CDCl_3$) spectrum of 2-[Hydroxy(4-bromophenyl)methyl] acrylonitrile (**3j**).

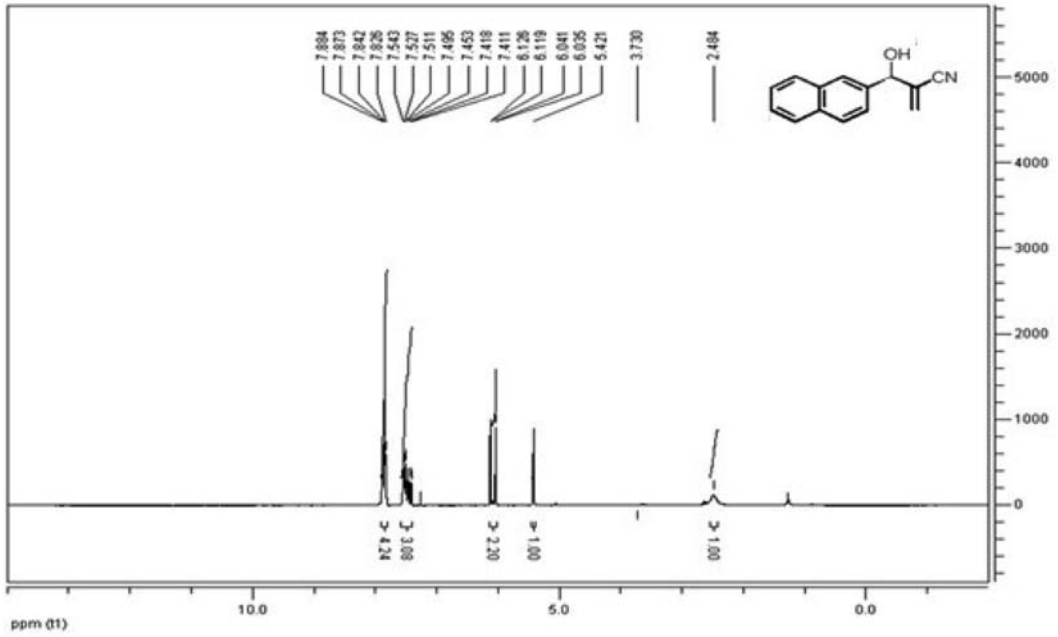

Figure S27. ^{1}H NMR ($CDCl_3$) spectrum of 2-[Hydroxy(naphth-2-yl)methyl] acrylonitrile (**3k**).

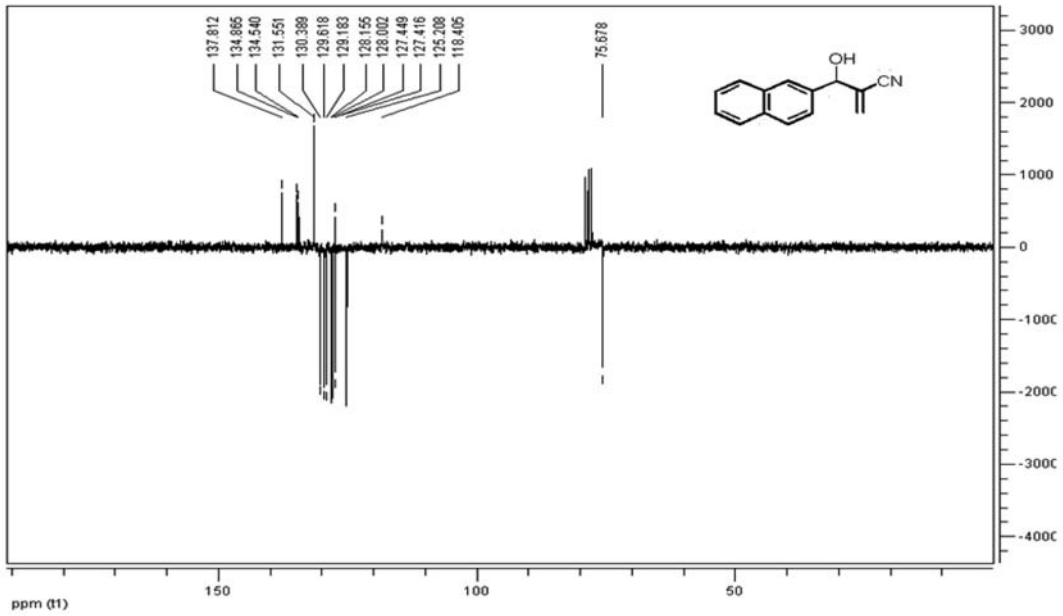

Figure S28. ^{13}C NMR ($CDCl_3$) spectrum of 2-[Hydroxy(naphth-2-yl)methyl] acrylonitrile (**3k**).

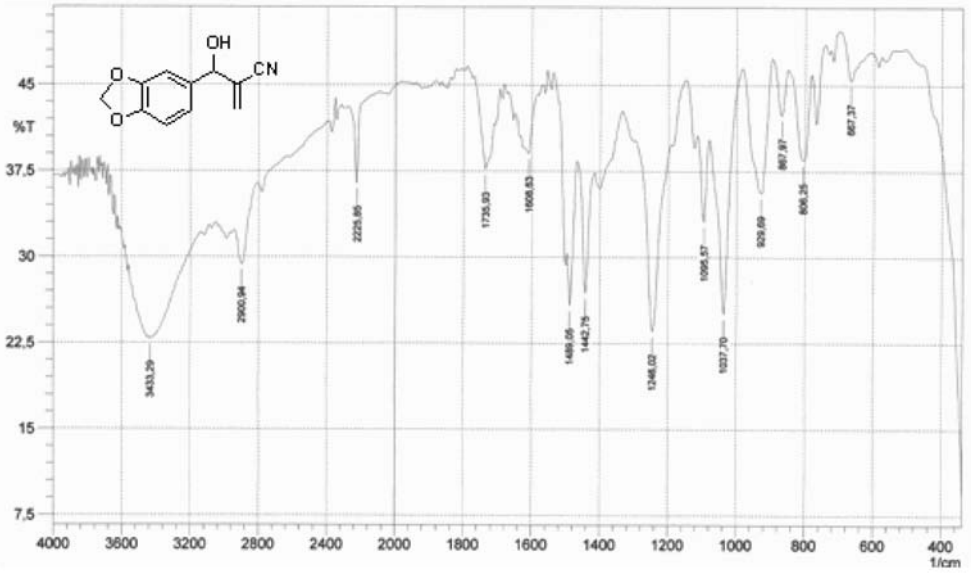

Figure S29. IR (KBr) of 2-[hydroxyl (1,3-dioxolephenyl) methyl] acrylonitrile (**3l**).

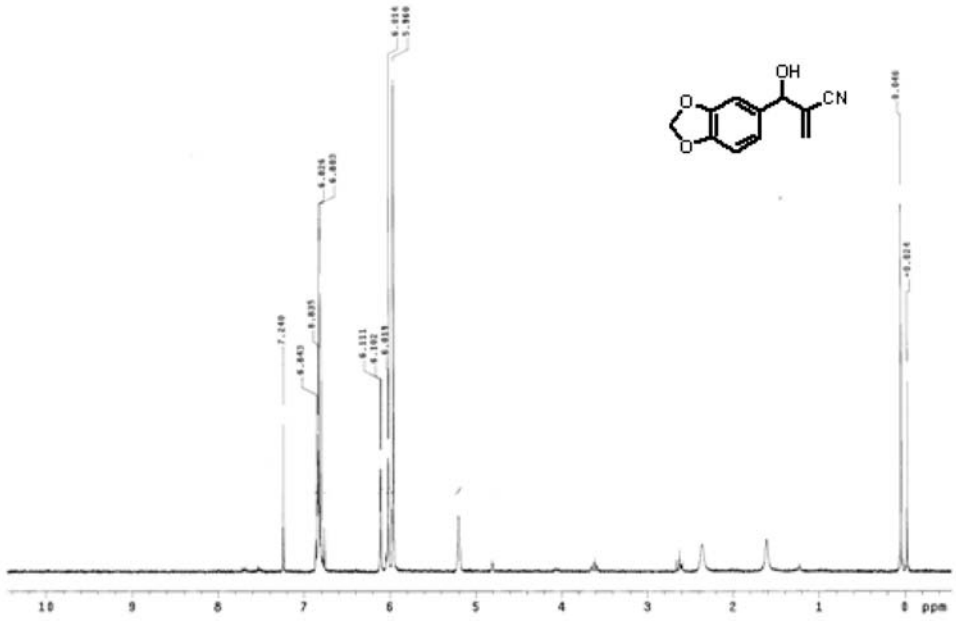

Figure S30. ^{1}H NMR ($CDCl_3$) spectrum of 2-[hydroxyl (1,3-dioxolephenyl) methyl] acrylonitrile (**3l**).

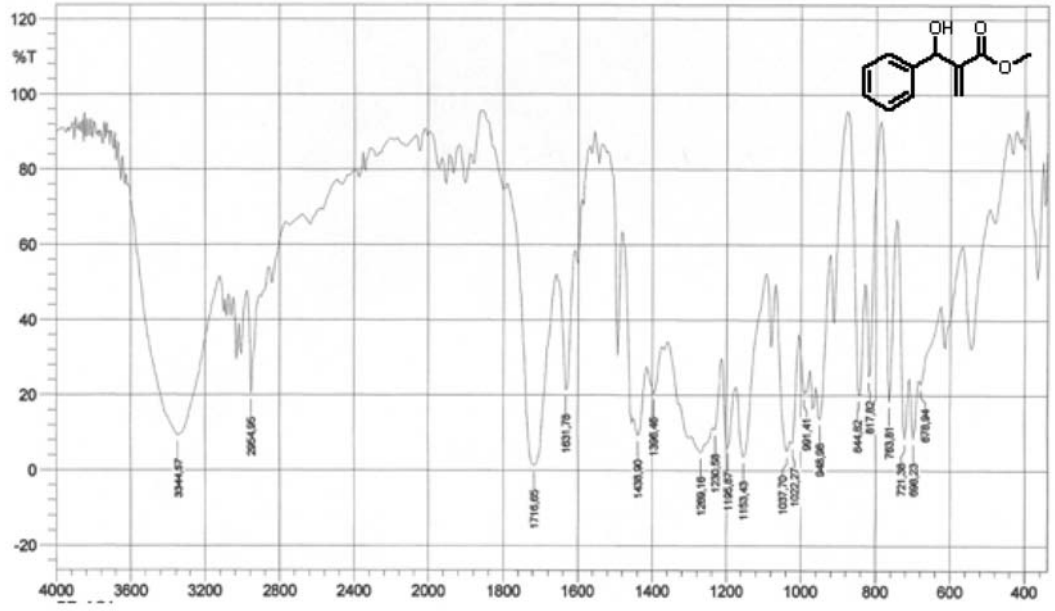

Figure S31. IR (KBr) of Methyl 2-[(hydroxylphenyl)methyl]acrylate (**6a**).

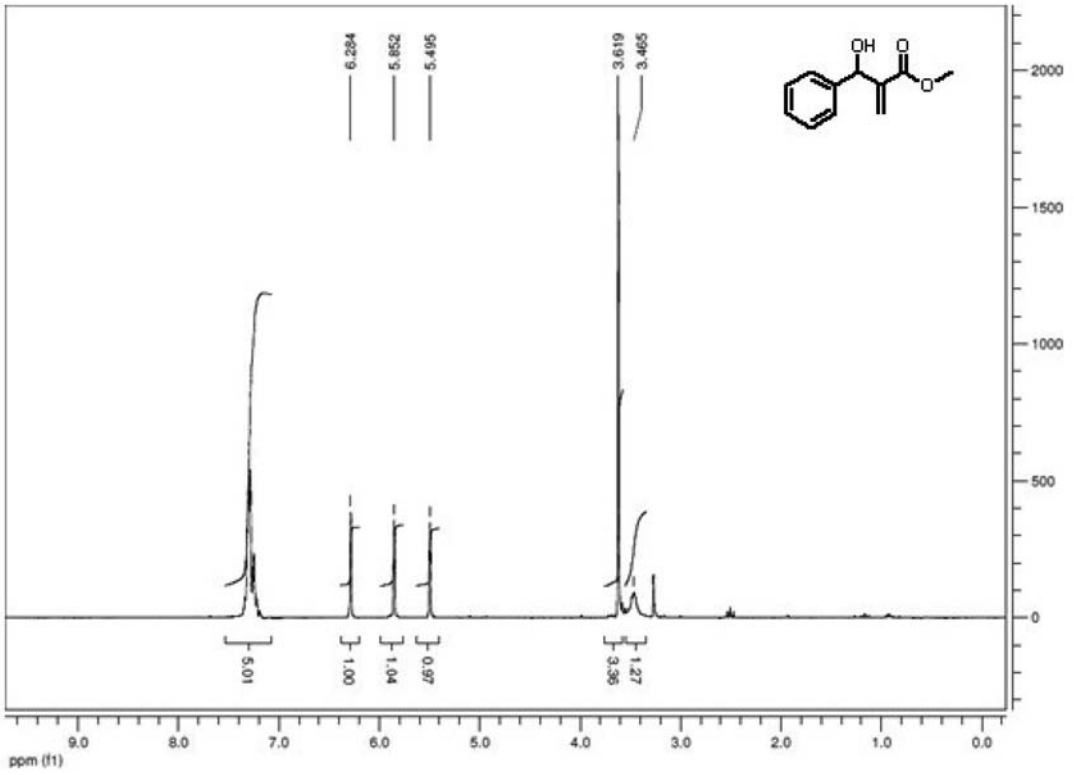

Figure S32. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[(hydroxylphenyl)methyl]acrylate (**6a**).

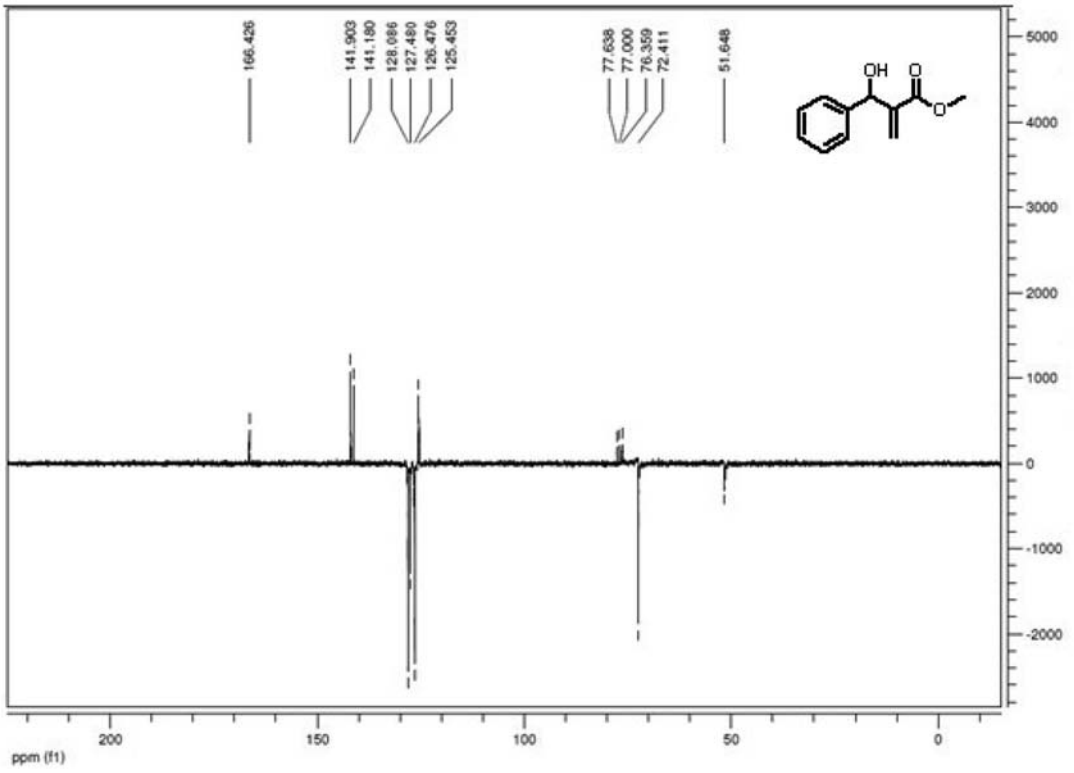

Figure S33. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[(hydroxylphenyl)methyl]acrylate (**6a**).

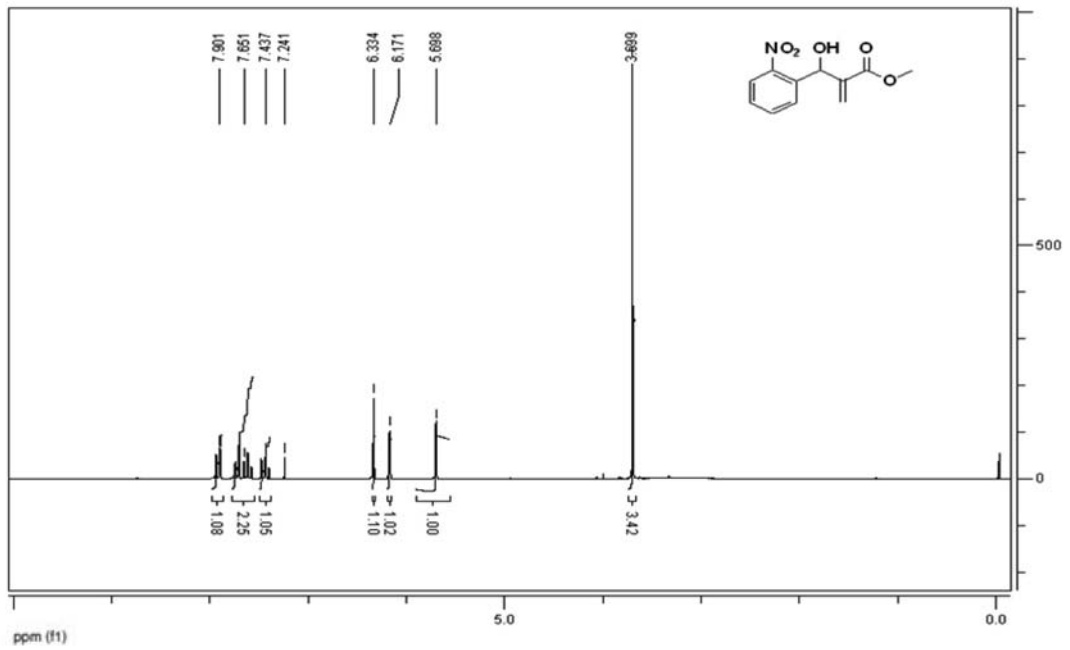

Figure S34. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl (2-nitrophenyl)methyl] acrylate (**6b**).

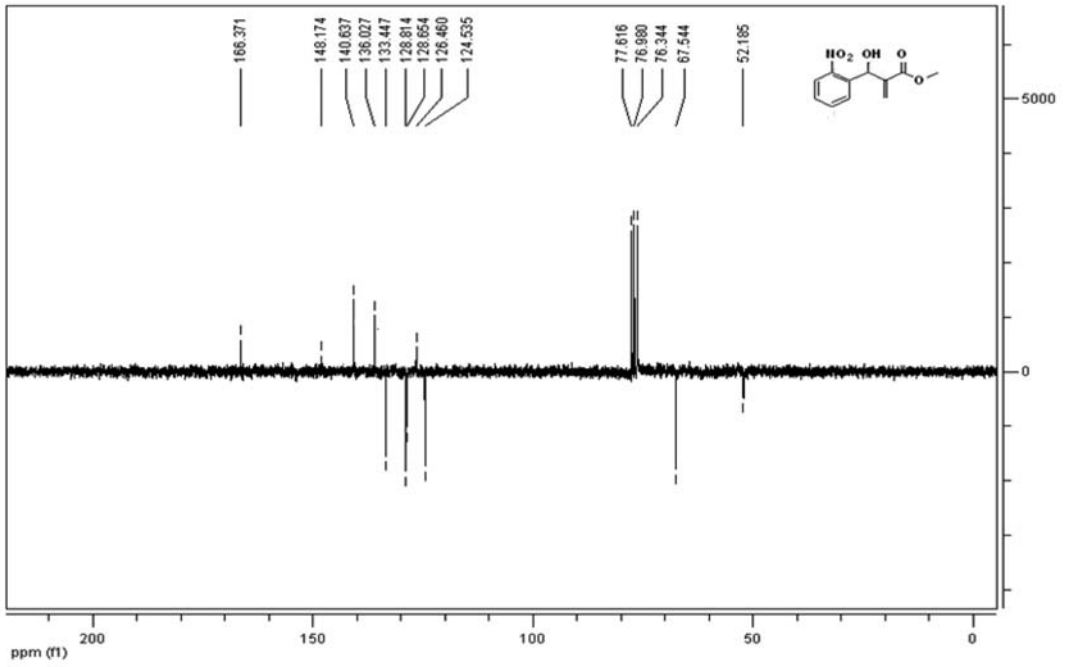

Figure S35. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl (2-nitrophenyl)methyl] acrylate (**6b**).

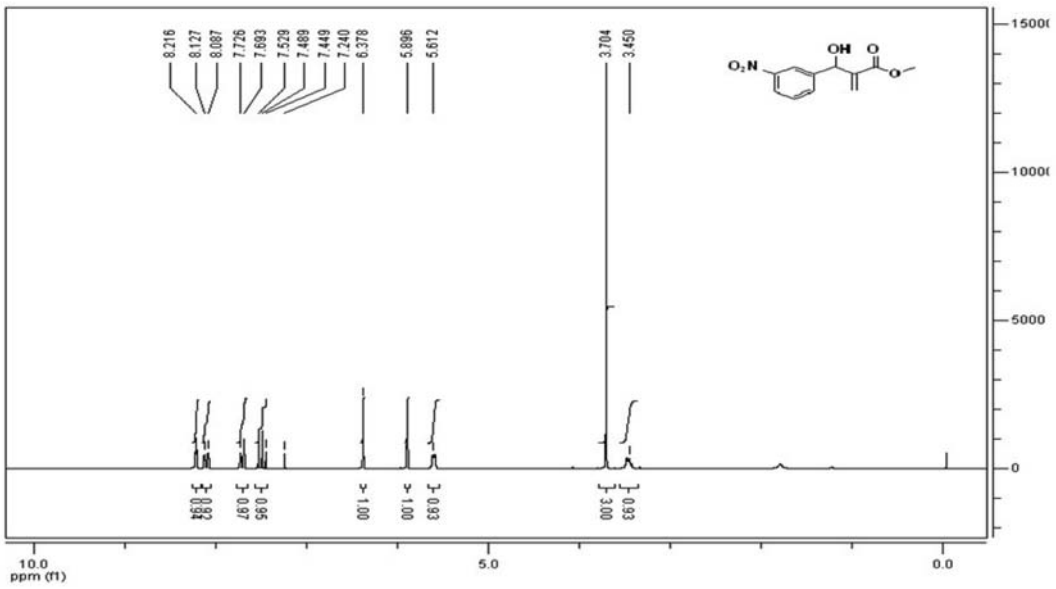

Figure S36. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(3-nitrophenyl)methyl] acrylate (**6c**).

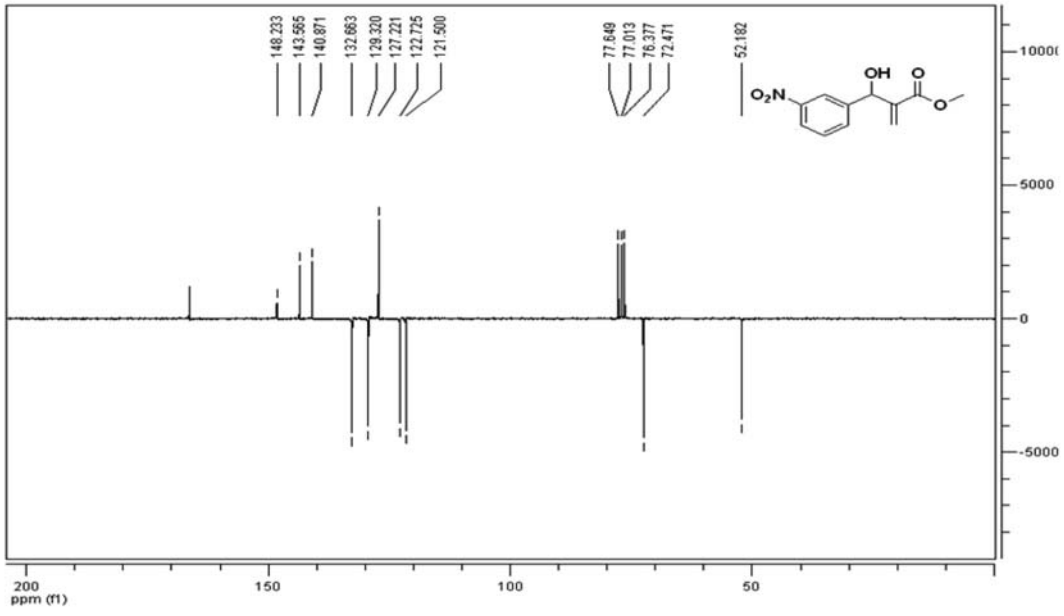

Figure S37. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(3-nitrophenyl)methyl] acrylate (**6c**).

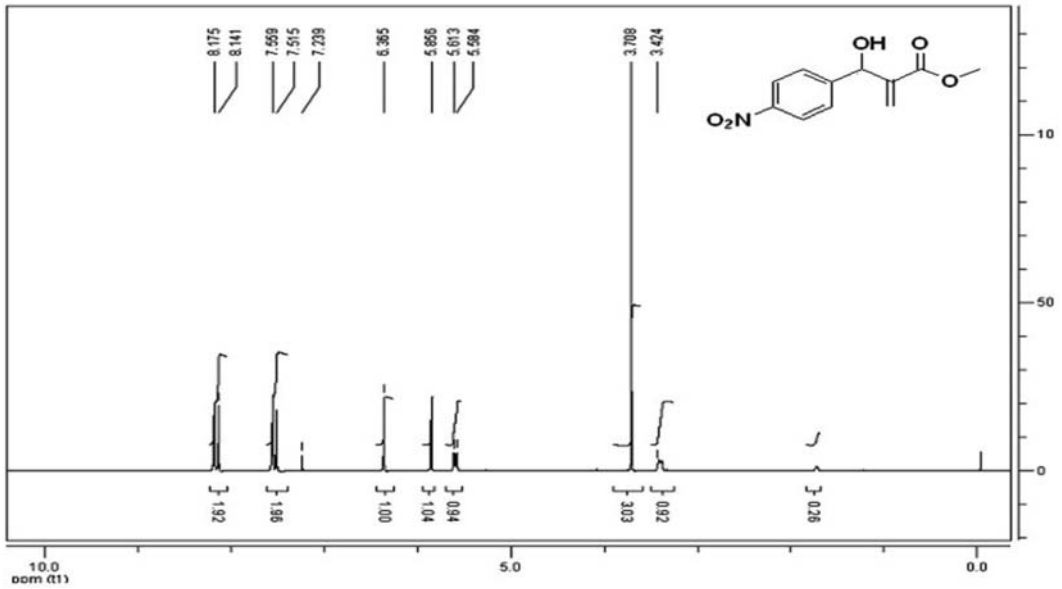

Figure S38. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(4-nitrophenyl)methyl]acrylate (**6d**).

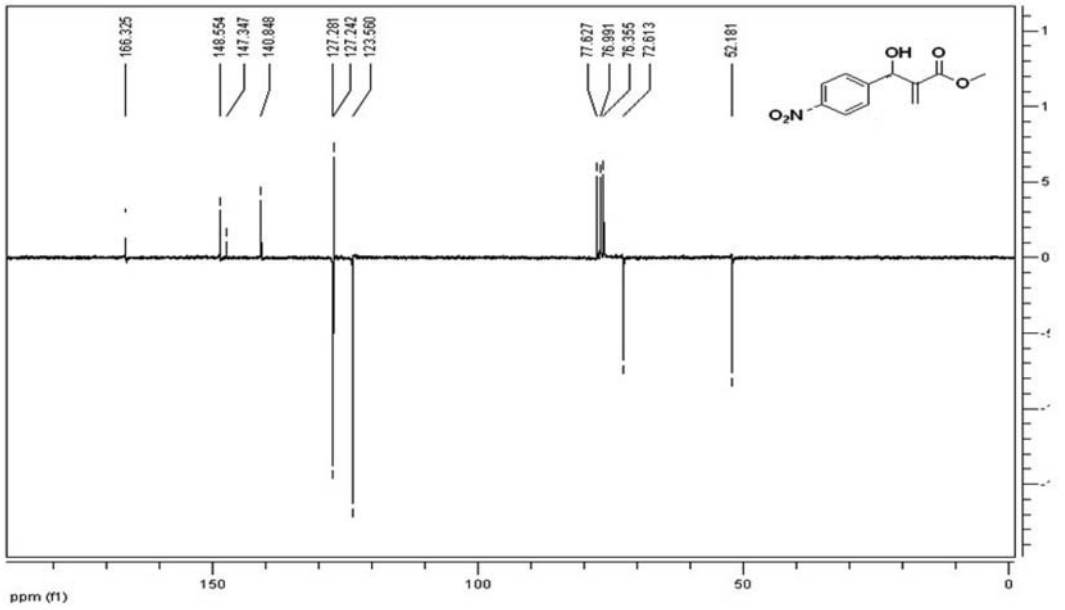

Figure S39. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(4-nitrophenyl)methyl]acrylate (**6d**).

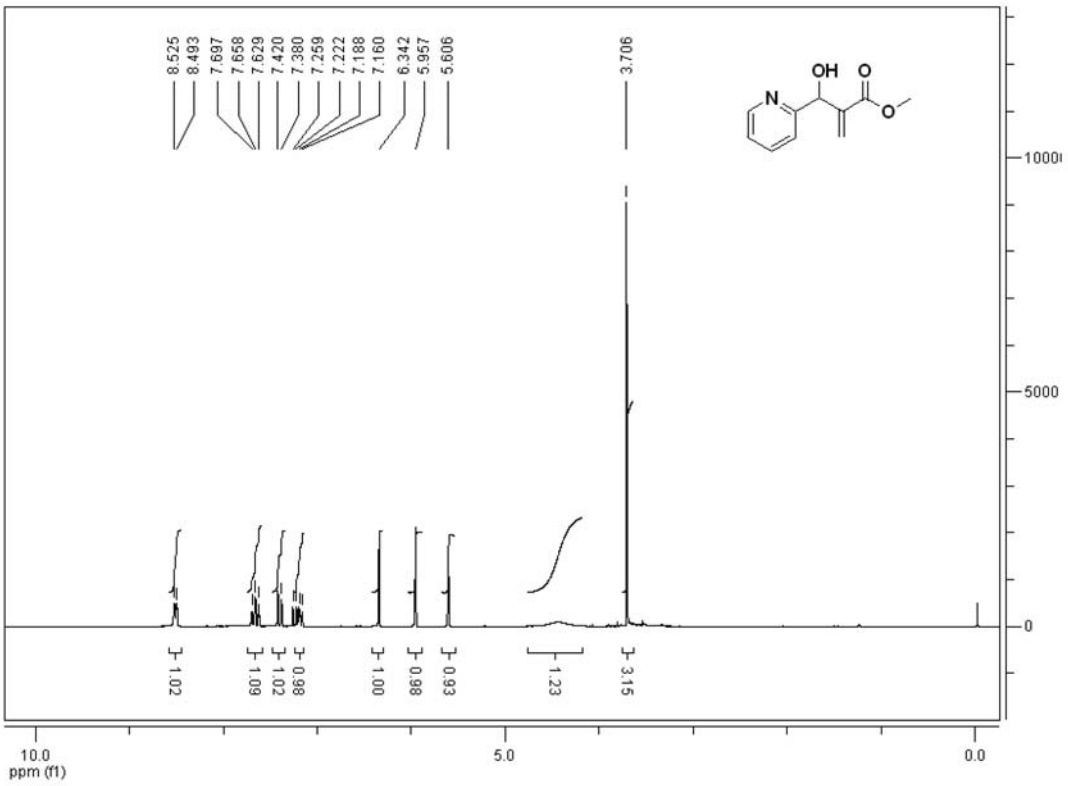

Figure S40. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(2-pyridinyl)methyl] acrylate (**6e**).

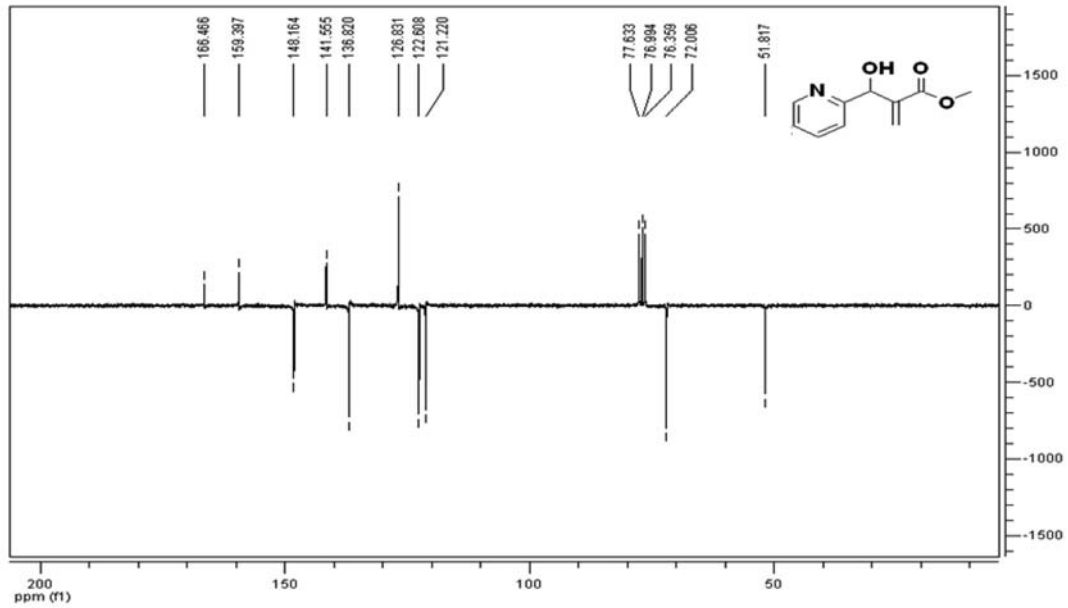

Figure S41. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(2-pyridinyl)methyl] acrylate (**6e**).

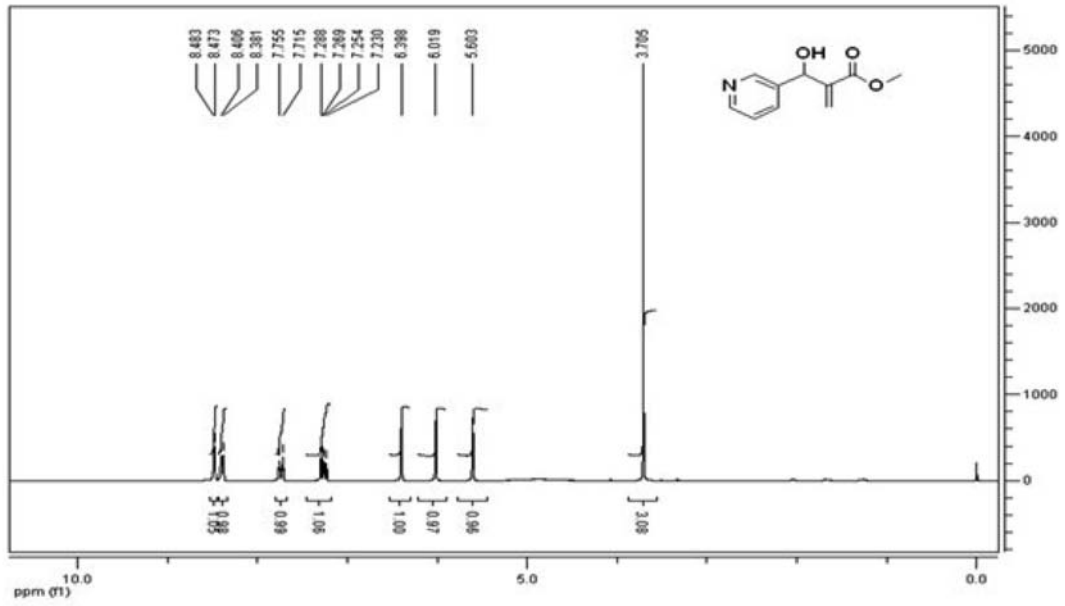

Figure S42. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(3-pyridinyl)methyl] acrylate (**6f**).

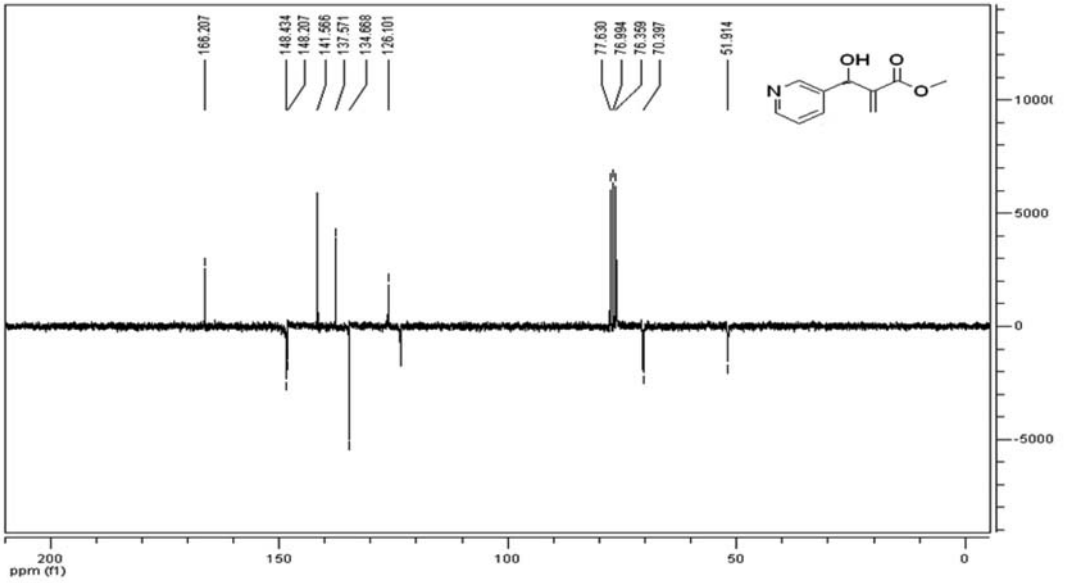

Figure S43. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(3-pyridinyl)methyl] acrylate (**6f**).

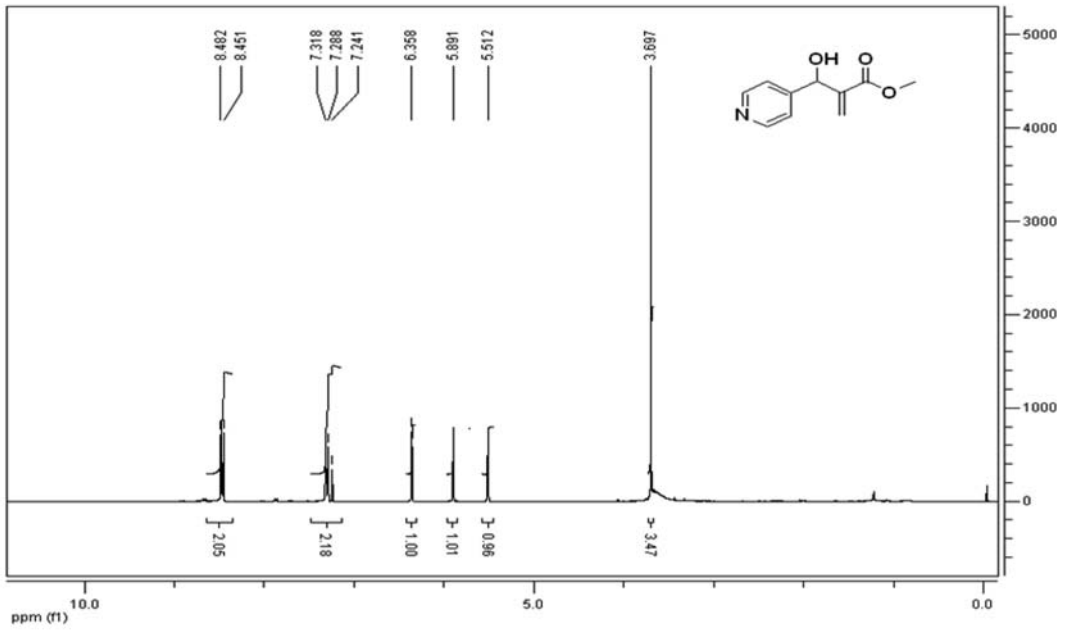

Figure S44. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl (4-pyridinyl)methyl] acrylate (**6g**).

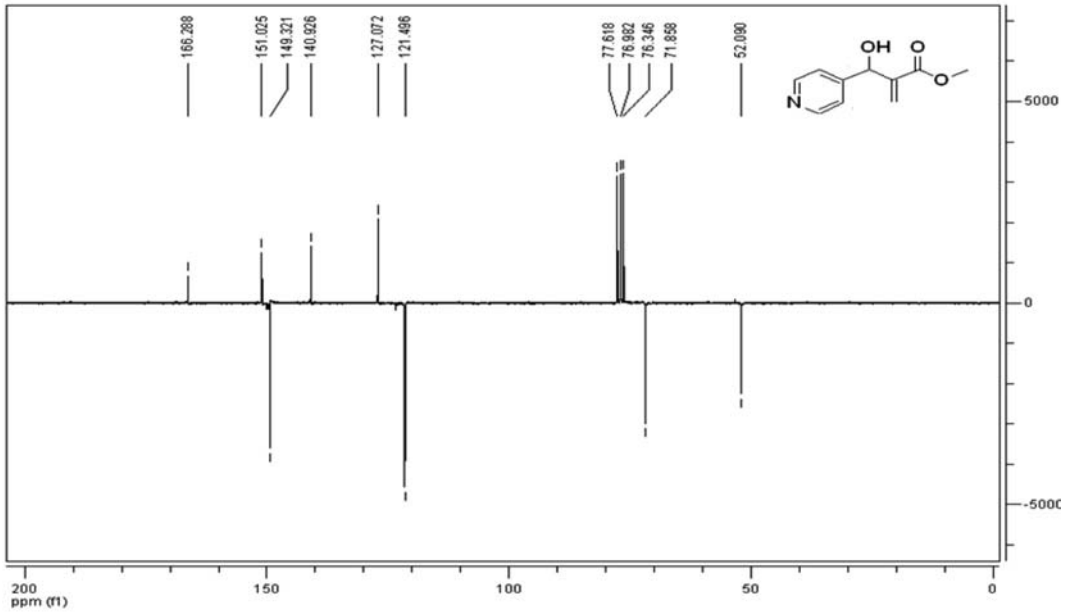

Figure S45. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl (4-pyridinyl)methyl] acrylate (**6g**).

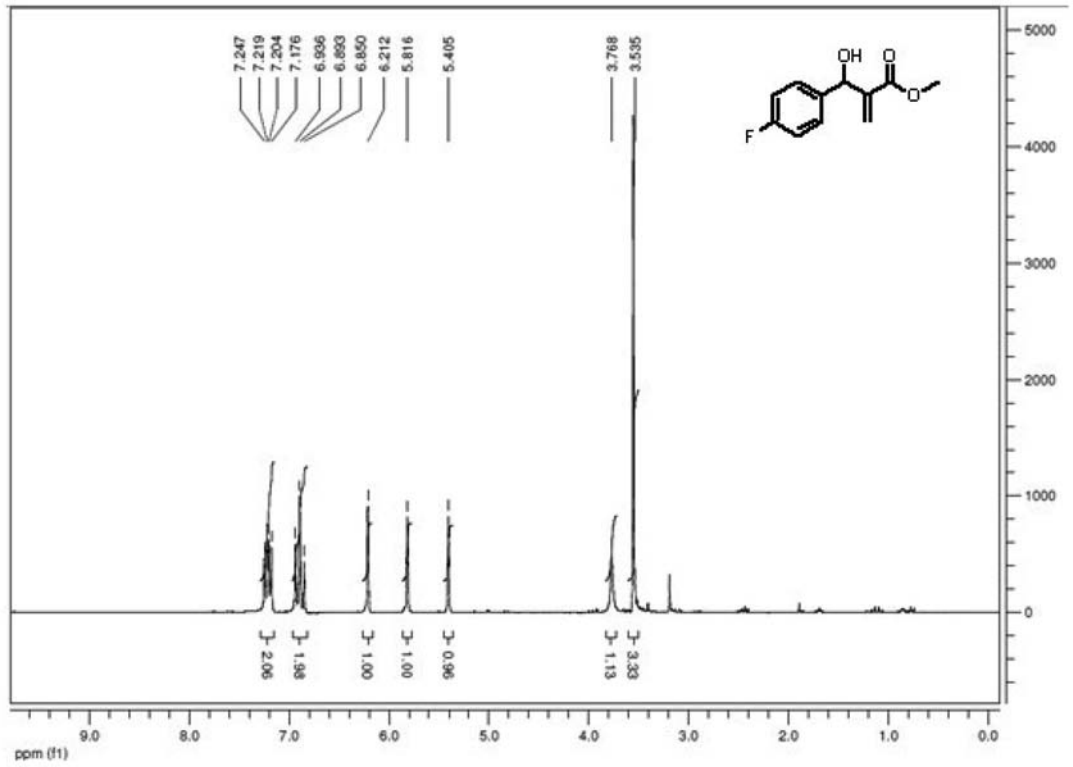

Figure S46. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl (4-fluorphenyl)methyl] acrylate (**6h**).

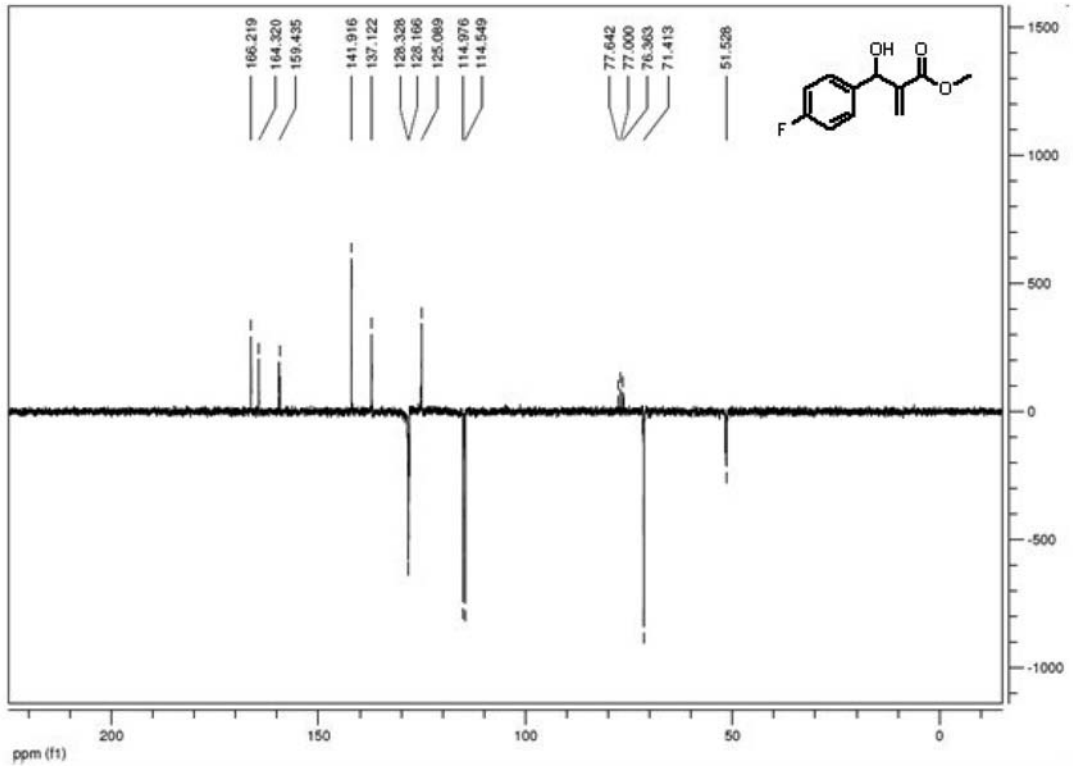

Figure S47. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl (4-fluorphenyl)methyl] acrylate (**6h**).

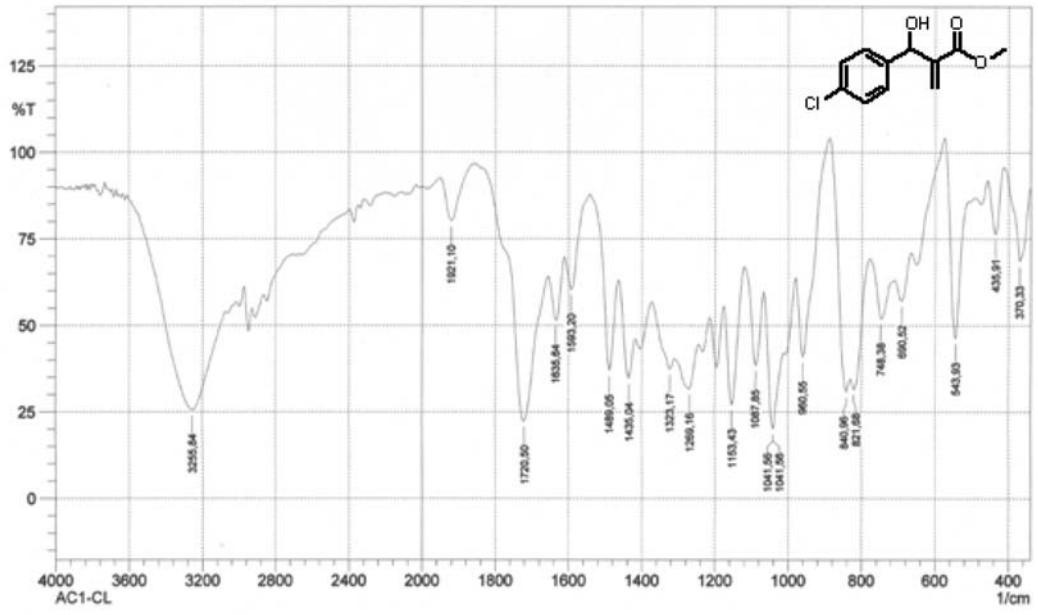

Figure S48. IR (KBr) of Methyl 2-[hydroxyl (4-chlorophenyl)methyl] acrylate (**6i**).

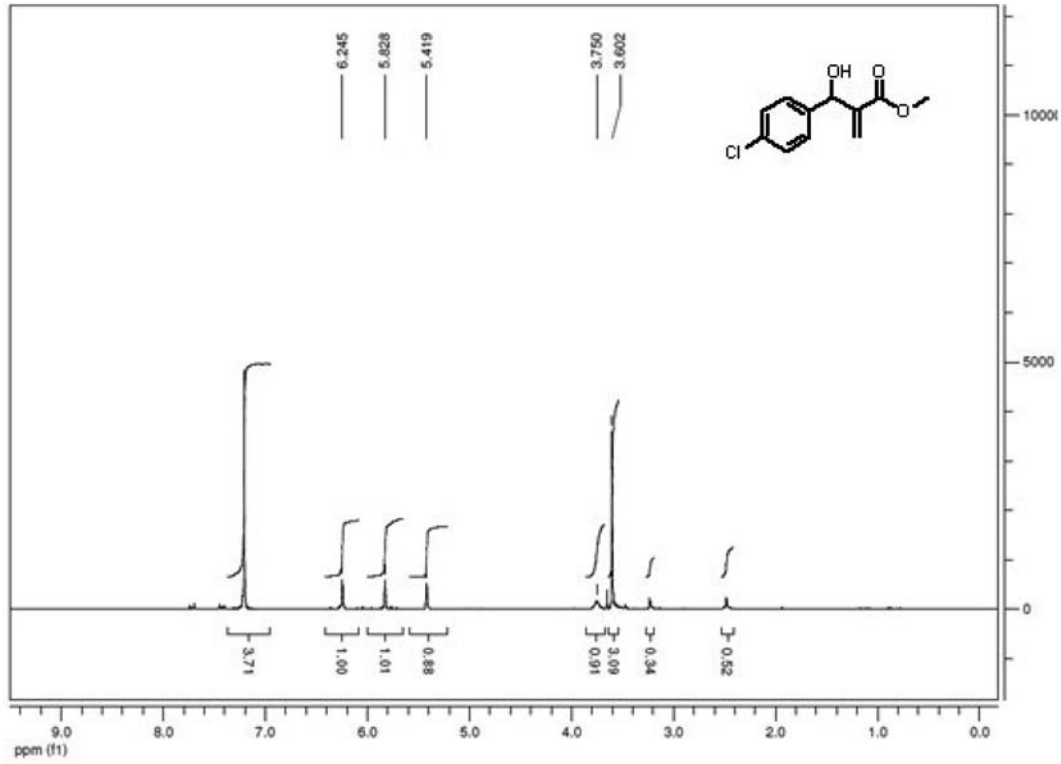

Figure S49. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl (4-chlorophenyl)methyl] acrylate (**6i**).

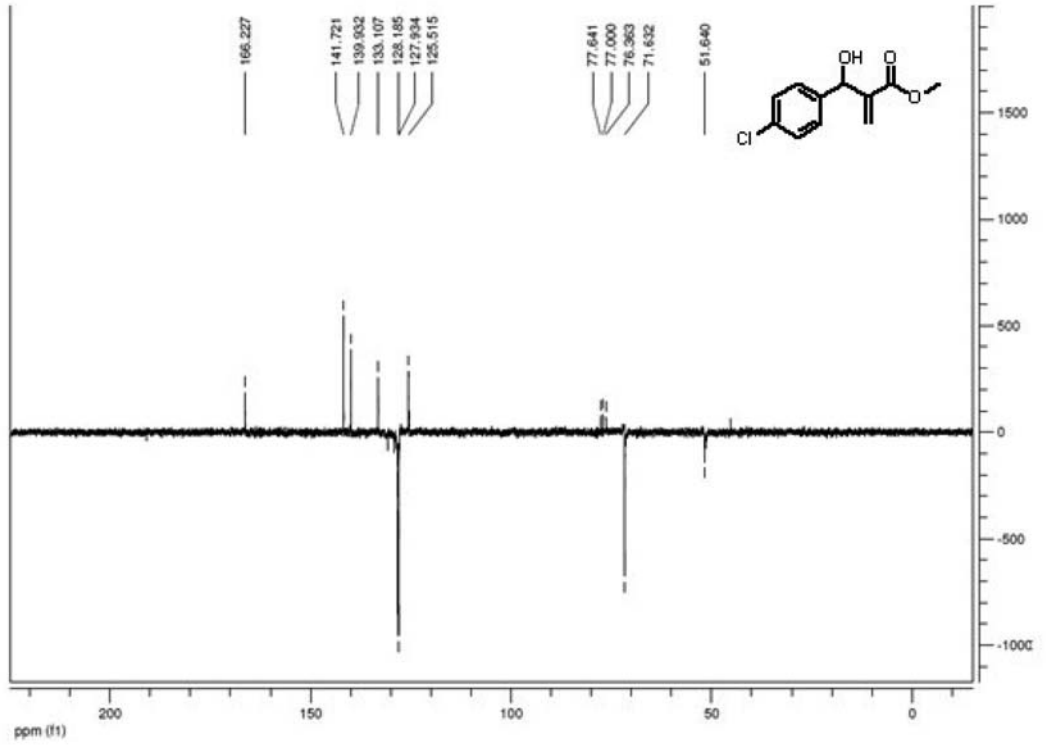

Figure S50. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl (4-chlorophenyl)methyl] acrylate (**6i**).

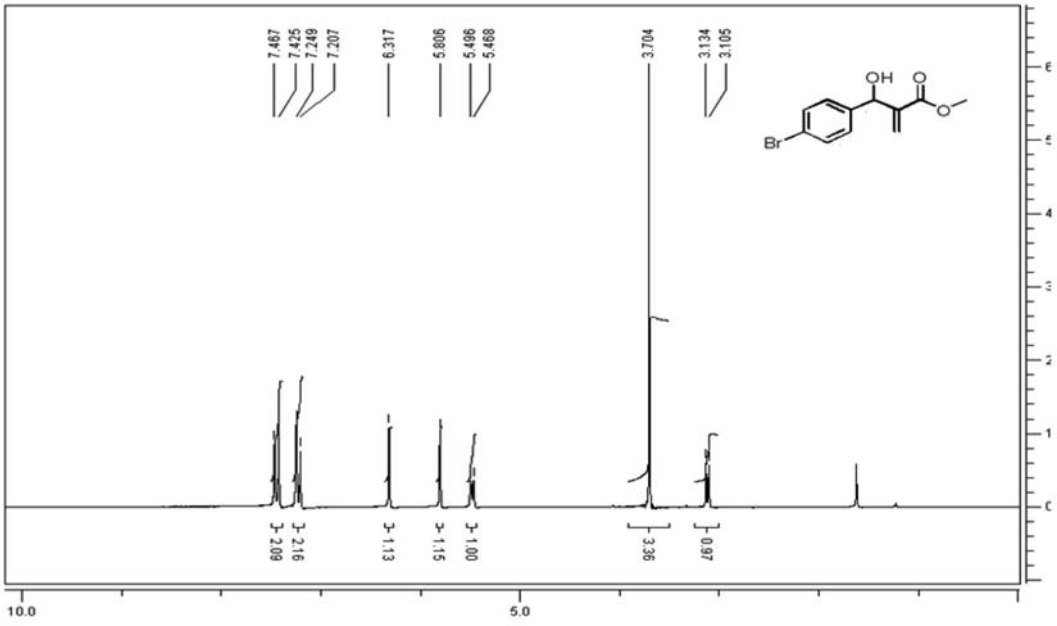

Figure S51. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(4-bromophenyl)methyl] acrylate (**6j**).

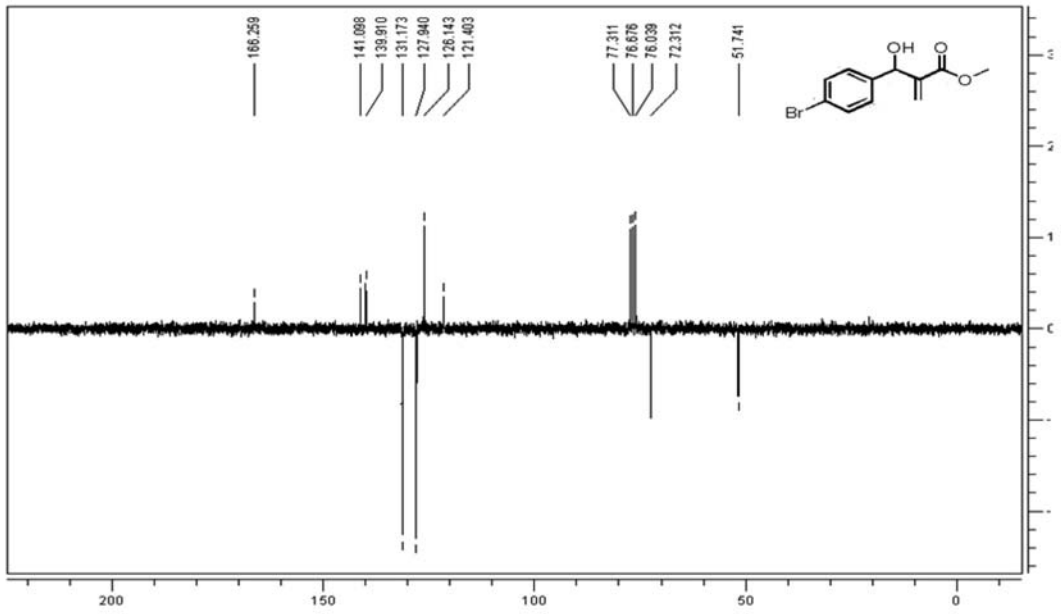

Figure S52. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(4-bromophenyl)methyl] acrylate (**6j**).

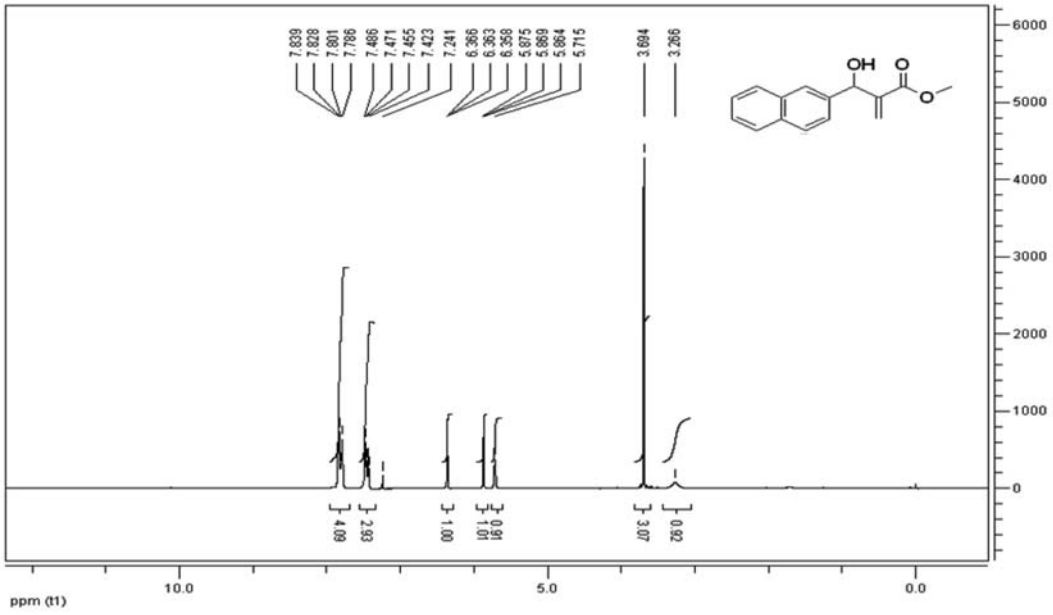

Figure S53. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(2-naphthyl)methyl] acrylate (**6k**).

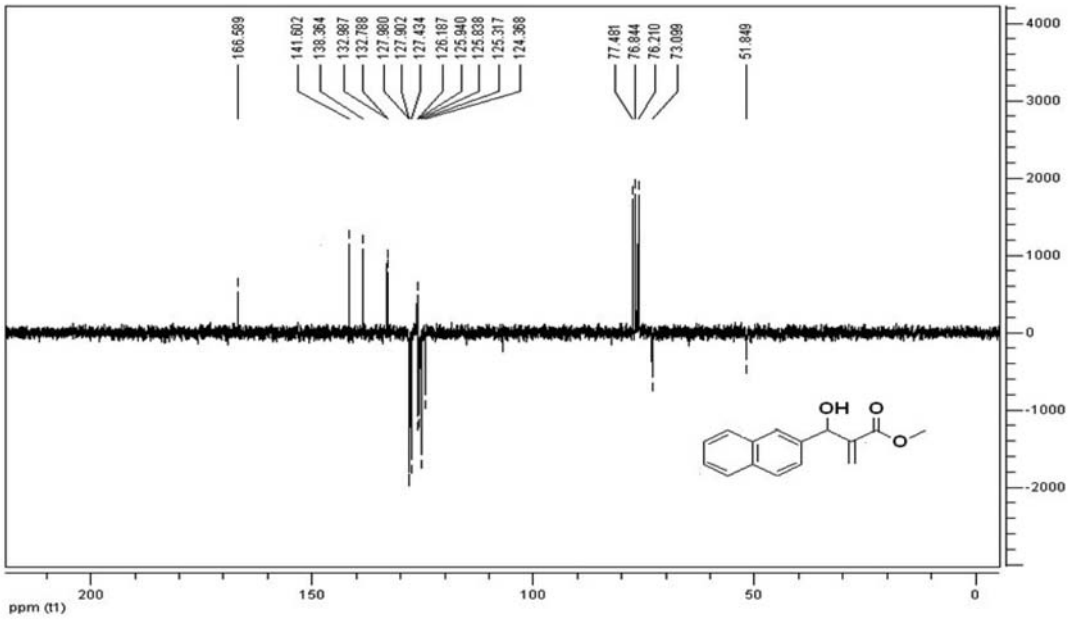

Figure S54. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(2-naphthyl)methyl] acrylate (**6k**).

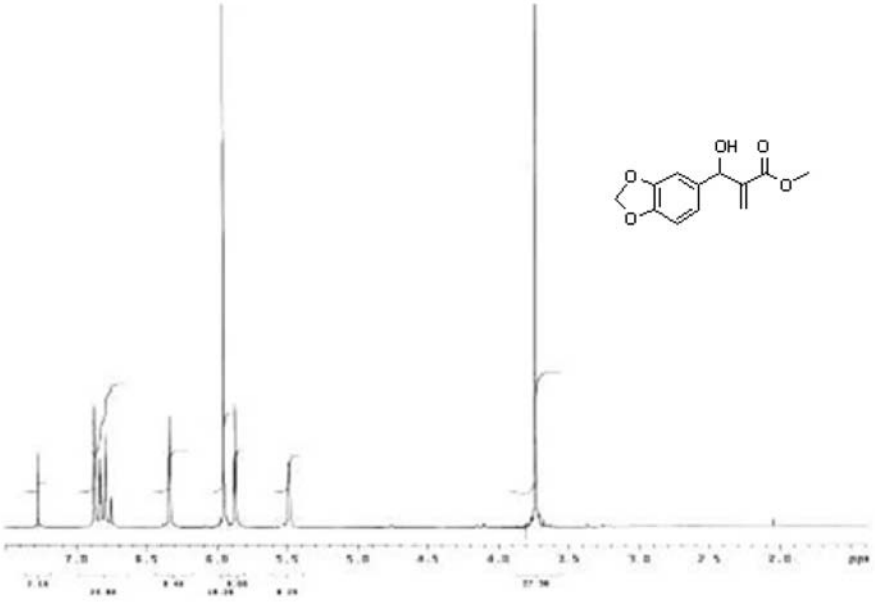

Figure S55. ^{1}H NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(1,3-dioxolephenyl)methyl] acrylate (**6l**).

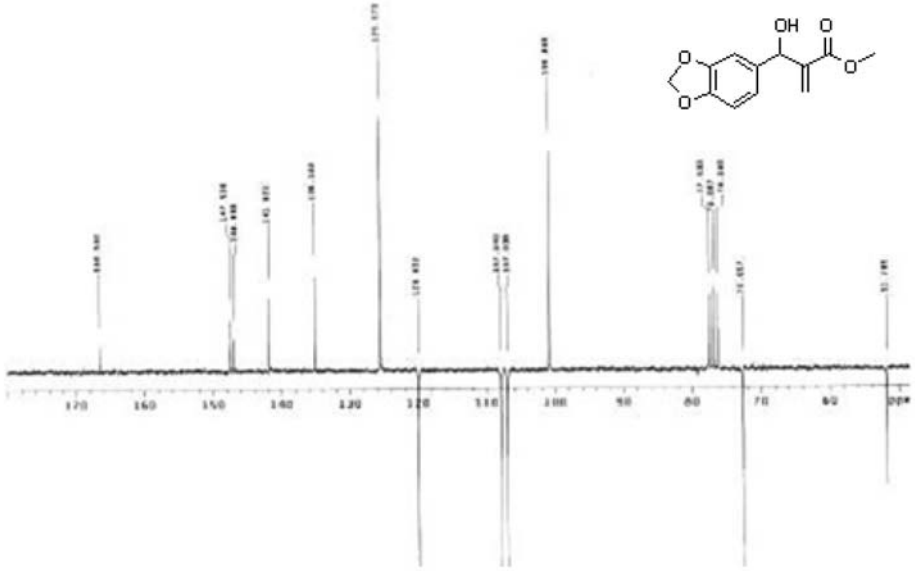

Figure S56. ^{13}C NMR ($CDCl_3$) spectrum of Methyl 2-[hydroxyl(1,3-dioxolephenyl)methyl] acrylate (**6l**).