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Supporting Information

Catalyst Free, Multicomponent-Tandem, Facile Synthesis of Pyrido[2,3-*d*]pyrimidines Using Glycerol as a Recyclable Promoting Media

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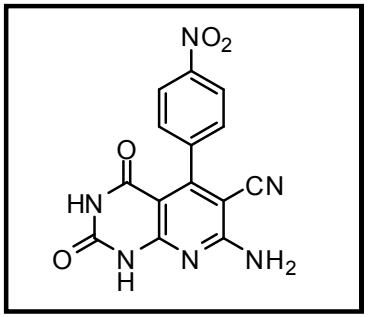
Experimental

General Remarks

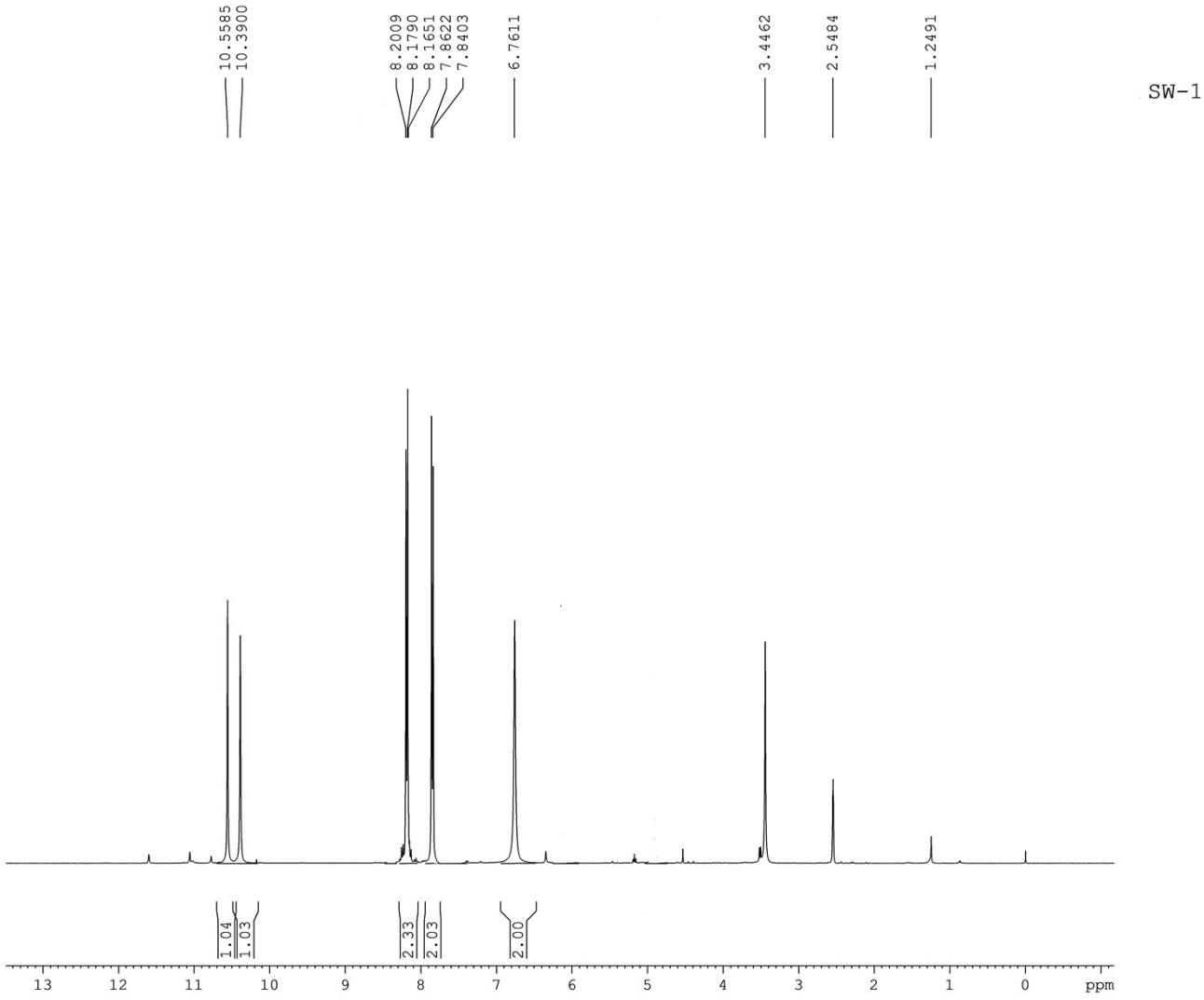
All chemicals were reagent grade and purchased from Aldrich, Alfa Aesar, Merck, Spectrochem and Qualigens and were used without purification. The reactions were monitored using pre-coated TLC plates of silica gel G/UV-254 of 0.25 mm thickness (Merck 60 F-254). Column chromatography was performed using silica gel (60-120) and (100-200). NMR spectra were recorded on a Bruker Avance-II 400FT spectrometer at 400 MHz (^{1}H) and 100 MHz (^{13}C) in DMSO using TMS as an internal reference. Mass Spectra (ESIMS) was obtained on Micromass quadro II spectrometer. Elemental analyses were carried out in a Thermo Scientific (FLASH 2000) CHN Elemental Analyser. Melting points were determined by open glass capillary method and were uncorrected.

Compound 28

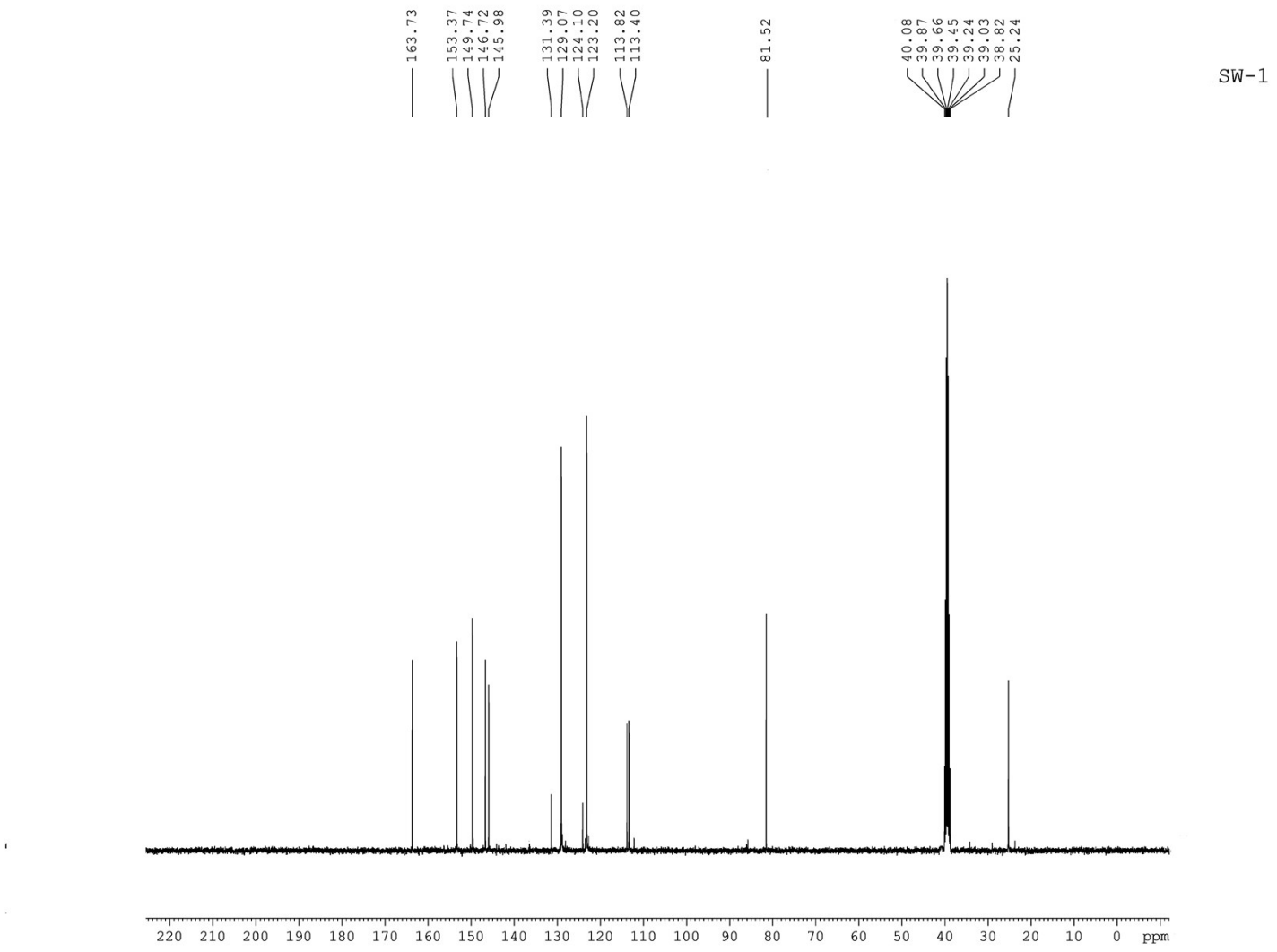


To a round bottom flask containing 5 ml glycerol was added respective 4-nitrobenzaldehyde **6** (1 mmol) and malononitrile **2** (1 mmol) under stirring and the temperature of the reaction was set at 80 ºC. After formation of the cyano-olefin intermediate, 6-amino uracil **5** (1 mmol) was added to the reaction mixture and it was allowed to stir till completion of the reaction (TLC) (80 min). Now warm water was added to the reaction mixture. Glycerol was dissolved in water and the insoluble solid crude product was separated by simple filtration to obtain the compound pyrido[2,3-*d*]pyrimidine **28** (Yield: 94%) which was as good as the pure product (^{1}H NMR).

Pale yellow solid; Mp: > 300°C; IR (KBr, cm): 3370, 3090, 2190, 1710, 1565; ^{1}H NMR (DMSO-d_6) (δ,ppm): 7.76 (2H, s), 7.85 (1H, d, ArH, *J*=8.76 Hz), 8.18 (1H, d, ArH, *J*=8.76 Hz), 10.39 (1H, S), 10.55 (1H, S); ^{13}C NMR (DMSO-d_6) (δ,ppm) 81.5, 113.4, 123.2, 124.1, 129.0, 131.3, 145.9, 146.7, 149.7, 153.3, 163.7; MS (ESI): *m/z* 324; found 325 $[M+H]^+$, 348 $[M+Na]^+$; Anal calcd for $C_{14}H_8N_6O_4$: C 51.86, H 2.49, N 25.92 %, Found C 51.83, H 2.54, N 25.95 %.



^{1}H NMR spectrum of compound **28**



^{13}C NMR spectrum of compound **28**