

NOTE

Microwave Assisted Synthesis of 3-Pyridyl Carboxamido-4-aryl-but-3-ene-2-ones

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2-Amino pyridine (1) was condensed with ethylacetoacetate to yield aceto acetamido pyridine (2). Compound 2 was treated with substituted aromatic aldehydes to get 3-pyridyl carboxamido-4-aryl-but-3-ene-2-ones (3) using microwave irradiation. The structure of all the synthesized compounds was confirmed on the basis of their elemental and spectral analysis.

Key Words: Microwave synthesis, Carboxamido pyridine.

The chemistry of α,β -unsaturated ketones and their heterocyclic analogues has always been an interesting field of study. This system has been used as a building block for a number of heterocycles¹. A wide range of biological activities²⁻⁴ is associated with these heterocycles. The amides containing a heterocyclic moiety have been reported to possess local anesthetic activities⁵. Considering these facts it was thought worthwhile to incorporate these two moieties together.

The melting points of synthesized compounds were taken in open capillaries and are uncorrected. The IR spectra (KBr) were recorded on Perkin-Elmer spectrophotometer. PMR spectra were taken on Bruker-DRX 300 spectrophotometer and mass spectra was recorded on JEOL SX-100 mass spectrometer. The reaction was carried out in domestic microwave oven (Samsung M 1630 N, output energy 600 W, frequency 2450 MHz). The purity of compounds was checked by TLC using silica gel-G.

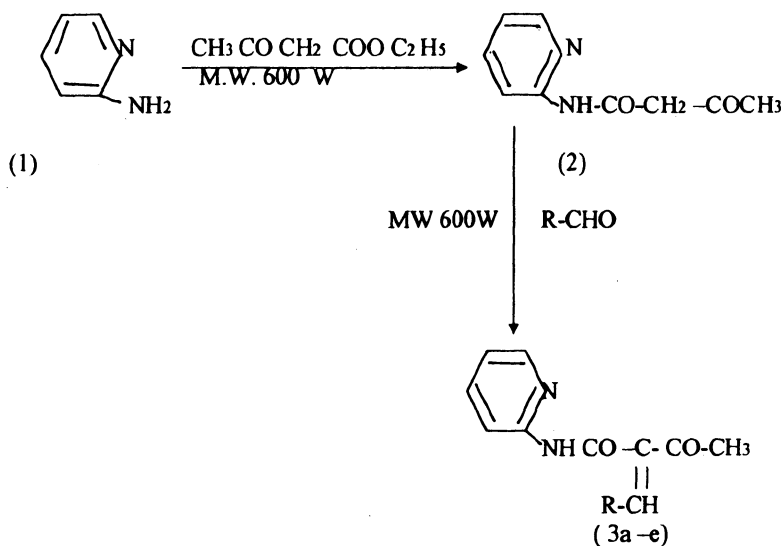
Synthesis of acetoacetamido pyridines (2)

A mixture of 2-amino pyridine (0.01 M) and ethyl acetoacetate (0.012 M) was taken in a conical flask capped with a loose funnel. The mixture was irradiated in microwave oven for about 3–5 min with occasional interruption. It was then cooled and poured into cold water. The separated solid was filtered, washed with water and dried. It was crystallized from alcohol to give compound 2 (yield *ca.* 80%).

Synthesis of compounds 3(a–e)

Compound (2) (0.01 M) and aromatic aldehyde (0.01 M) were mixed thoroughly in a conical flask. The mixture was irradiated in a microwave oven

for 4–6 min at 600 W. power. It was then cooled to room temperature. The separated solid was crystallized with benzene : petroleum ether (40 : 60) to get yellow crystals. **3a**, m.p. 136°C (yield 60%); IR (KBr, cm^{-1}): 1690 $\nu(\text{NHCO})$, 1650 $\nu(\text{CO})$, 3205 $\nu(\text{NH})$; PMR δ 2.20 (s) 3H (CH_3), 3.38 (s) 1H (CH), 6.38–8.7, Multiplet (ArH), Mass m/e 267 (100%); **3b** m.p. 178°C (70%); IR (KBr, cm^{-1}): 1680 $\nu(\text{NHCO})$, 1653 $\nu(\text{CO})$, 3220 $\nu(\text{NH})$; PMR δ 2.38 (s), 3H, CH_3 , 3.9 (s) 1H, CH, 7.0–8.5, Multiplet, (ArH); **3c** m.p. 130°C (yield 74%); **3d** m.p. 128°C (yield 70%); **3e** m.p. 160°C (yield 62%), IR (KBr, cm^{-1}): 1693 $\nu(\text{NHCO})$ 1650 $\nu(\text{CO})$ 3210 $\nu(\text{NH})$; Mass m/e 256 (100%) 213, 163, 154.



3a: R = C_6H_5 , **3b:** R = 4-Cl- C_6H_4 , **3c:** R = 3OMe-4OH- C_6H_3 , **3d:** R = 4OMe- C_6H_4 , **3e:** R = Furyl.

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