

SUZUKI, HECK AND SONOGASHIRA REACTIONS: SYNTHESIS OF SOME NOVEL ISOXAZOLE DERIVATIVES

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ABSTRACT

The chalcone (E)-3-(4-ethoxyphenyl)-1-phenylprop-2-en-1-one (1) has been synthesized from available 4-fluoroacetophenone and 4-fluorobenzaldehyde in a basic medium. Compound (1) reacts with bromine in a glacial acetic acid to get (E)-2, 3-dibromo-3-(4-ethoxyphenyl)-1-phenylpropane-1-one (2). A cyclization of (2) with hydroxylamine hydrochloride in a basic medium furnished isoxazole derivative (3). Reaction of (3) with N-halosuccinimide in a glacial acetic acid afforded 3, 5-bis (4-fluorophenyl)-4-haloisoxazoles (4, 5), [halogen = Br (4), I (5)]. The halo-substituted isoxazoles (4, 5) were used as a key intermediate for the synthesis of novel substituted isoxazole derivatives (6-12) based on the Suzuki, Heck and Sonogashira reactions. The structures of the novel compounds were confirmed using the physical spectroscopy measurements like: FT-IR spectra, Mass spectra, ^1H , ^{13}C , ^{19}F -NMR spectra and micro elemental analysis (C. H. N).

KEYWORDS: Synthesis, Chalcone, Isoxazole Derivatives, Characterization