ZnCl₂/AlCl₃ SUPPORTED ON SILICA GEL A REUSABLE CATALYST FOR SYNTHESIS OF SOME NEW ETHYL 6-(2-ETHOXY-2-OXOETHYL)-4-ARYL-2-OXO-1,2,3,4-TETRAHYDROPYRIMIDINE-5-CARBOXYLATE DERIVATIVES

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Several improved procedures for the preparation of DHPMs have been reported, either by modification of the classical one-pot Biginelli approach itself [1]. Recently several other methods indicate the use of lanthanide compounds, [2] Lewis acids such as BF₃·OEt₂, FeCl₃, Yb(OTf)₃, ZrCl₄, BiCl₃, Mn(OAc)₃, LiClO₄, Cu(OTf)₂, HCl, [3] polyphosphate ester (PPE) [4] and NH₄Cl [5] can overcome the drawback of the classical Biginelli reaction. In view of our general interest in the multi-component condensations (MCCs), [6] we report herein, a simple, facile, rapid and efficient MCRs for the preparation of some new 6-substituted DHPMs derivatives with ZnCl₂/AlCl₃ supported on silica gel, as a nontoxic, inexpensive, and easily available reagent. When a mixture of diethyl-3-oxoglutarate 1 (1 mmol), benzaldehyde 2a (1 mmol), urea 3 (1.2 mmol), and ZnCl₂/AlCl₃-SiO₂ (10 mol%), DHPMs 4a was isolated in 98 % yield (Scheme). The reaction was carried out at 80 ºC for 2 h (until the diethyl-3-oxoglutarate disappeared, as shown by TLC analysis). All products were characterized by ¹H, ¹³C NMR, IR, M.S. and elemental analyses.

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