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An efficient and versatile Hantzsch method for synthesis of 1,4-dihydropridines at mild reaction conditions

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Polyhydroquinolines are fused heterocyclic compounds which exhibits bactericidal, fungicidal, analgesic and anti-inflammatory activities and act as hypotensive and anticancer agents. Due to their biological importance, there has been considerable interest in developing new synthetic methods for the preparation of polyhydriquinolines. Herein as a part of our efforts to develop new synthetic method in heterocyclic chemistry, we report an environmentally benign, efficient and convenient protocol for the synthesis of derivatives of polyhydriquinoline by combining dimedone, ethyl acetoacetate and ammonium acetate with various substituted arylaldehydes in good to excellent yields by a grinding method under solvent-free conditions. The process is simple, straightforward, environmentally benign and easily leads to the synthesis of desired polyhydriquinolines i.e. ethyl 4-phenyl-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydro-quinoline-3-carboxylate. The catalyst is easily available and inexpensive. This method proves to be advantageous in terms of excellent yields and short reaction times. In recent years, with the emphasis on adoption of cleaner green chemistry processes, a tremendous interest has been observed in carrying out various chemical transformations under heterogeneous conditions owing to simplicity in operation. Among phase transfer catalysts, TEBAC (Triethyl Benzyl Ammonium Chloride) has gained immense popularity in organic synthesis in last few decades. Owing to all the advantages of TEBAC, the development of TEBAC catalyzed organic reactions is still an attractive research area in the coming future.

Biography

Sharda Goel is a Professor in Organic Chemistry in the Department of Chemistry, Maharshi Dayanand University, India. She has published 40 papers in national and international journals of high repute. She has been attending and participating in conferences and seminars at national and international levels and contributing to the discipline of chemistry.

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