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One pot condensation reaction of heterocyclic amine, 1, 3-diketone and an aldehydes using in situ generated superoxide ion: A rapid synthesis of structurally diverse drug- like complex heterocycles

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Multi-component reactions (MCRs), in which multiple reactions are combined into one synthetic operation, have been used extensively to form carbon-carbon bonds in synthetic chemistry. Such reactions offer a wide range of possibilities for the efficient construction of highly complex molecules in a single procedural step, avoid the complicated purification operations and allow savings of both solvents and reagents. In the past decade, there have been tremendous development in three- and four-component reactions and great efforts continue to be made to develop new MCRs. To date the development of new MCRs is an evolving and exciting research topic in organic synthesis, particularly in the synthesis of heterocyclic compounds. Superoxide chemistry is one of the most fascinating problems of current research. The use of this novel, innocuous and biochemical species has been demonstrated for achieving a number of organic transformations. Despite some progress made in the understating of the organic chemistry of superoxide ion, an important aspect involving the use of superoxide ion in multi-component synthesis still remains untouched and warrants study in this direction. The present report demonstrates a fast and selective multi-component transformation of an amines, cyclic 1, 3-diketone and aldehydes into benzothiazolo-/benzimidazolo-quinazolinone derivatives under mild reaction conditions of superoxide ion at room temperature in excellent yields.

Biography

Sundaram Singh has completed her PhD from BHU, Varanasi. She is the Associate Professor of Chemistry Dept., IIT (BHU), Varanasi. She has published more than 20 papers in reputed journals. Her research area is green synthesis, organic synthesis and evaluation of biological activity.

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