



Microwave Assisted ZnO Nanocatalysed biginelli Synthesis of Pyrazolopyrimidione Derivatives and Evaluation of Their Bioactivity

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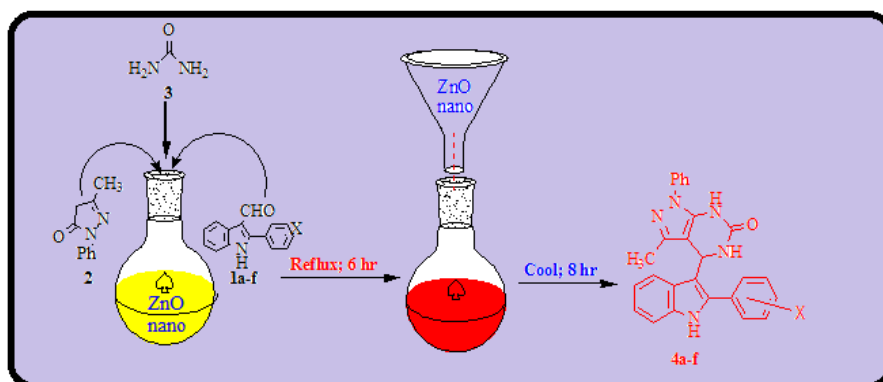
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ABSTRACT

A new series of 3-methyl-1-phenyl-4-(2-phenyl-1H-indol-3-yl)-4,5-dihydro-1H-pyrazolo[3,4-d]pyrimidin-6(3aH)-one derivatives (**4a-f**) by using multicomponent one pot reaction of 3-formylindole (**1a-f**), 3-methyl-1-phenyl-5-pyrazolone **2** and urea **3** catalyzed by ZnO nanoparticles under microwave irradiation has been reported. Use of ZnO nanoparticles in this environmentally benign protocol takes less time and gives better yield than classical approach. Recyclability and reusability of this nanocatalyst is a paradigm shift directed to greener and rate efficient way. All the synthesized compounds (**4a-f**) are confirmed on the basis of elemental analyses and spectral data. Representative compounds were also evaluated for their antimicrobial activity against 10 pathogens and anti-inflammatory activity at different concentration. Some of them showed promising anti-inflammatory activity.

Graphical Abstract:



Keywords: Green Chemistry, Microwave irradiation, ZnO nanocatalyst, Biginelli Reaction, Multi-component reaction.