



## Journal of Applicable Chemistry

2014, 3 (2): 689-695

(International Peer Reviewed Journal)



### Green, Efficient Microwave-Assisted Synthesis, Antimicrobial Activity And Molecular Docking Studies of 1,2,3,6-Tetrahydropyrimidine-4-Carboxylate

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Accepted on 7<sup>th</sup> March 2014

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#### ABSTRACT

*A simple and efficient microwave assisted three-component condensation of  $\beta$ -keto ester, aldehyde and urea or thio-urea catalyzed by  $\text{NaHSO}_4 \cdot \text{SiO}_2$  using microwave irradiation technique. A series of novel diethyl 6,6'-(1,4-phenylene)bis(2-imino-5-methyl-1,2,3,6-tetrahydropyrimidine-4-carboxylate) has been synthesized, confirmed by analytical and spectral data and evaluated for their antimicrobial activity and in silico antitubercular activity. The catalyst used for this process is eco-friendly, easy to handle, non-toxic for environment and recyclable at least up to 5 cycles with good to excellent yield.*

**Keywords:** Microwave, Heterogeneous catalyst, Biginelli reaction, Multicomponent reactions (MCRs), 1,2,3,4-tetrahydropyrimidine-4-carboxylates.

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