

"Greener Synthesis of Bis-1,4-Dihydropyrimidines, Spectral Analysis & *in-vitro* Anti-microbial Screenings"

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Abstract—Heterocyclic moieties constitute a major class of existing drugs. These are widely distributed in nature and are essential for life-processes. Dihydropyrimidines (DHPMs) scaffold represent a very important class of organic compounds. These have been found to possess attractive pharmacological importance. Literature is flooded with procedures to achieve their synthesis. Among those methodologies, Microwave-Assisted Organic Synthesis has come forward as an ecofriendly benign procedure. This technology ensures thermal management in better way, thereby making it a sustainable process. In previous years, we prepared several biologically significant pyrimidine derivatives and communicated too. In continuation of our research work on preparation of new pyrimidine containing heterocycles; we herein focus on the synthesis of new "Bis-dihydropyrimidines" using a suitable linking agent. This synthesis was carried out without using any toxic, costly catalyst using microwave-irradiations, hence presenting this work as an elegant method from economic point of view.

Their structural elucidation was carried out using modern spectral techniques. These bis-dihydropyrimidine derivatives were isolated in good yields.

Further, the prepared moieties were also evaluated for their *in-vitro* anti-microbial behaviors. Results of these studies revealed that these bis-heterocycles exhibited excellent to moderate anti-microbial properties.