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Proficient synthesis of bioactive annulated pyrimidine Derivatives: A review

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Abstract Synthesis of bioactive annulated pyrimidine derivativies are the most significant tasks in N-heterocyclic chemistry, as proved to be very attractive and constructive for the design of a new molecular framework of potential drugs with varying pharmacological activities. This review paper summarizes the one-pot multicomponent synthesis of annulated Nitrogen and oxygen-containing heterocycles, such as Pyrano[2,3-*d*]pyrimidines, Pyrido[2,3-*d*]pyrimidines and Pyrido[2,3-*d*;5-6-*d*]dipyrimidines. The synthetic procedure is based on the chemistry of domino Knoevenagel-Michael addition mechanism.

Keywords: Pyrano[2,3-*d*]pyrimidines, Pyrido[2,3-*d*]pyrimidines, Pyrido[2,3-*d*;5-6-*d*]dipyrimidines, Barbituric acid/Thio-barbituric acid, Aromatic aldehydes, 6- aminouracil.

1. Introduction

The hereditary materials are made up of heterocycles like adenine, guanine, cytosine, thymine and uracil. Nitrogen containing six member heterocycles and their fused derivativies, such as Pyrano/Pyridopyrimidines are reported to have a wide range of biological activities includes, antibacterial [1], antiallergic [2], antitumor [3], antifolate [4], tyrosine kinase [5], antimicroibial [6] calcium channel antagonists [7], anti-inflammatory, analgesic [8], antihypertensive [9], antileishmanial [10], tuber culostatic [11], anticonvulsants [12], diuretic potassiumsparing [13] and antiaggressive activities [14]. Therefore synthesis of fused pyrimidines has significant