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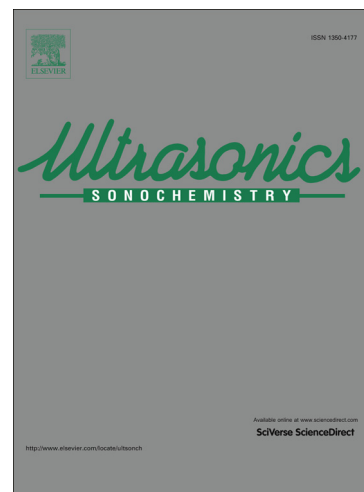
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Efficient sonochemical green reaction of aldehyde, thiobarbituric acid and ammonium acetate using magnetically recyclable nanocatalyst in water

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Abstract: A facile one-pot and four-component economical synthesis of pyrido[2,3-d:6,5-d]dipyrimidines using aldehyde, 2-thiobarbituric acid and ammonium acetate in the presence of magnetically heterogeneous catalyst under ultrasonic irradiation in water is described. The present synthesis shows attractive characteristics such as; the use of magnetically recoverable and reusable catalyst, convenient one-pot operation, short reaction periods, high to excellent yields and the use of water as a green reaction medium, mild reaction conditions and is considered to be relatively environmentally benign.

Keywords: Ultrasound, Dipyrimidine, Magnetic, Aldehyde, 2-Thiobarbituric acid.

Introduction

A large number of heterocyclic compounds containing pyrimidine rings are associated with various pharmacological and biological activities. Pyrido-[2,3-d]-pyrimidines are heterocyclic ring systems of significant interest due to several remarkable biological and pharmacological properties associated with this scaffold[1,2]. As shown in Fig. 1, some of its derivatives have been found to act as antitumor agents [3] inhibiting dihydrofolate reductases or tyrosine kinases [4], while some other are known as antiallergic [5], anti-inflammatory [6], antifolate [7], antihypertensive [8], fibroblast growth factor receptor 3

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