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Zirconyl chloride catalysed synthesis of 2,2'-arylmethylene bis(3-hydroxy-5,5-dimethyl-2-cyclohexene-1-ones) under green chemistry conditions**Anju bajwan, Sharda Goel and Vijender Goel**
Maharshi Dayanand University, India

Nowdays main emphasis is being laid on the adoption of cleaner, safer and environmentally benign reaction conditions avoiding the use of flammable, volatile and toxic solvents for carrying out various chemical transformations. C-C bond formation via condensation of active methylene containing compounds with aromatic aldehydes is a reaction of great significance in organic synthesis. In this context the choice of aqueous medium for carrying out organic reactions consumes great significance as water plays important role in biological processes as well as a medium in organic reactions which proves to be more advantageous than those in organic solvent. Therefore, switching from organic media to aqueous media as a reaction medium is a challenging and attractive task for synthetic organic chemists. Catalyst plays a significant role in chemical industry and has a major impact on quality of human life and also its development. Among the popular reported heterogenous catalyst, Zirconyl chloride has gained the immense popularity in organic synthesis because of its recyclability, inertness, thermal stability and ease of separation from the reaction mixture. It is very attractive catalyst as it could be easily recycled via simple filtration technique. Its excellent catalytic activity can be observed over a vast array of acid catalysed organic transformations and synthesis of various organic compounds. In course of development of green methodologies for synthesis of heterocyclic compounds having biological activity, herein we attempted for an efficient and high yielding synthesis of various substituted tetraketones i.e 2,2'-aryl-methylene bis(3-hydroxy-5,5-dimethyl-2-cyclohexene-1-one) from an arylaldehyde and dimedone in 2:1 ratio in aqueous medium in the presence of zirconyl chloride. These compounds were identified on the basis of spectral analysis and by comparison with authentic samples. In the present investigation the use of any toxic and hazardous chemicals during any stage of reaction has been avoided and it meets our requirements of reaction conditions, reaction times and yields.

Biography

Anju bajwan pursuing PhD in Maharshi Dayanand University, Rohtak in organic chemistry. I am working on condensation reactions and heterocyclic compounds under green chemistry conditions. I have done internship during my MSc in lupin limited for 45 days in drug quality control department. I am research oriented scholar devoting to research on green conditions.

anju88820@gmail.com

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