



SnCl₂×2H₂O CATALYZED EFFICIENT ONE-POT KNOEVENAGEL CONDENSATION, MICHAEL ADDITION AND CYCLO-DEHYDRATION OF DIMEDONE AND ALDEHYDES IN SOLVENT FREE AND GREEN CONDITIONS

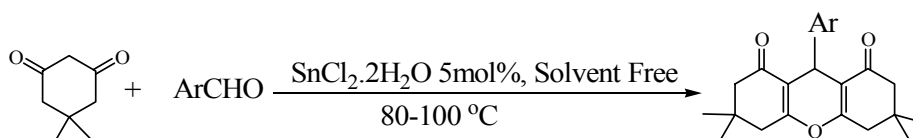
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Synthesis of 1, 8-dioxo-octahydroxanthenes is generally achieved by the condensation of 5, 5-dimethyl-1, 3-cyclohexa-dione with aromatic aldehydes using Lewis acid catalysts. Although there are several methods reported, using Lewis acid catalysts for the synthesis of 1, 8-dioxo-octahydroxanthene [1-2], they suffer from one or other drawbacks such as longer reaction times, low yields, ease of availability of catalyst, involve cumbersome preparation of catalysts and lack of selectivity.

Recently, SnCl₂×2H₂O has emerged as medium and as well as catalyst in various organic transformations, including synthesis of quinoline derivatives, conjugate addition of indoles to alpha, beta-unsaturated ketones, synthesis of bisindolylmethanes, the Paal–Knorr synthesis of pyrroles and the Fischer synthesis of indole [3]. In continuation of our work on the development of application of solid acids in the organic synthesis [4], here we report the synthesis of 1, 8-dioxo-octahydroxanthenes catalyzed by SnCl₂.2H₂O under solvent free conditions at 80-100 °C. The reactions are completed within 30-150 minutes with high yields that are higher or comparable to the reported methods (Scheme).



Ar = Ph, 2-Cl-Ph, 4-MeO-Ph, 3-NO₂-Ph, 4-NO₂-Ph,
2-Br-Ph, 2-Me-Ph, 4-Cl-Ph, 4-Br-Ph....

Scheme

References:

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- [3] L. Nagarapu, R. Bantu, R. Puttireddy, *Appl. Catal. A: General*, 2007, **332**, 304.
- [4] B. Karami, M. Montazerzohori, *Molecules*, 2006, **11**, 720.