

## EXTRACT OF BARBERRY AS ENTIRELY GREEN CATALYST FOR THE SYNTHESIS OF STRUCTURALLY DIVERSE 3,4,5-SUBSTITUTED FURAN-2(5H)-ONES

Nourallah Hazeri<sup>a\*</sup>, Raziieh Doostmohammadi<sup>a</sup>, Belgheis Adrom<sup>a</sup>,  
Mojtaba Lashkari<sup>b</sup>, Malek Taher Maghsoodlou<sup>a</sup>

<sup>a</sup>Faculty of Science, University of Sistan and Baluchestan, Zahedan P.O. Box 98135-674, Iran

<sup>b</sup>Faculty of Science, Velayat University, Iranshahr P.O. Box 9911131311, Iran

\*email: [nhazeri@chem.usb.ac.ir](mailto:nhazeri@chem.usb.ac.ir); [n\\_hazeri@yahoo.com](mailto:n_hazeri@yahoo.com)

**Abstract.** An eco-friendly and environmentally benign synthesis of 3,4,5-substituted furan-2(5H)-ones employing Iranian seedless barberry, known as Zereshk, (*Berberis integerrima* “Bidaneh”, *Berberidaceae*) as a biocatalyst, was developed. For the first time, we found that the barberry juice could be effectively used for three-component condensation reaction of aldehydes, amines, and dialkyl acetylenedicarboxylates. The merits of this method include the environmentally friendly reaction conditions, simple operation, broad substrate, satisfying yields, and the generation of less waste rather than the conventional chemical reagents.

**Keywords:** three-component reaction, dialkyl acetylenedicarboxylates, furan-2(5H)-ones, aldehydes, barberry juice.

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