

Green-synthesis of CoFe_2O_4 NPs from *Bryophyllum pinnatum* leaf extract and its catalytic application in Pechmann condensation

Abhinav Raj Khandelwal, and Harshita Sachdeva*

Department of Chemistry, University of Rajasthan, Jaipur, Rajasthan, India

ABSTRACT The magnetic cobalt ferrite nanoparticles (CoFe_2O_4 NPs) have been efficiently synthesized by using *Bryophyllum pinnatum* leaf extract. The green-synthesized CoFe_2O_4 NPs have been successfully applied as a heterogeneous and recyclable Lewis acid catalyst for the synthesis of coumarin derivatives through Pechmann condensation in excellent yield under solvent-free conditions. Moreover, synthesized coumarin derivatives have been assessed for their anti-inflammatory activity.

KEY WORDS Green synthesis, CoFe_2O_4 NPs, Coumarin derivatives, *Bryophyllum pinnatum*, Anti-inflammatory activity.

How to cite this article: Khandelwal, A.R. and Sachdeva, H. Green-synthesis of CoFe_2O_4 NPs from *Bryophyllum pinnatum* leaf extract and its catalytic application in Pechmann condensation, *Indian J. Heterocycl. Chem.*, **2025**, 35, 595–603. <https://doi.org/10.59467/IJHC.2025.35.595>