

Biosynthesis of Nanoparticles from Novel Endophytic Bacteria Isolated from *Nyctanthes arbor-tristis* and its Characterization †

Edet Love Mendie ¹, S. Hemalatha ^{1,*}

¹ School of Life Sciences, B. S Abdul Rahman Crescent Institute of Science and Technology, Vandalur, Chennai, India

* Correspondence: hemalatha.sls@crescent.education;

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Abstract: In this study, a novel endo-phytic bacteria from the flower of one of the most valuable plants in India *Nyctanthes arbor-tristis* was isolated and identified. The supernatant biomass of this endophyte was then subjected to AgNPs biosynthesis, which was confirmed by a change in color and characterized using UV-Visible spectrophotometer, SEM, and EDAX. The antibacterial effectiveness of the synthesized AgNPs was determined via MIC and MBC against different strains of *E.coli*. Based on our research, this study is the first to demonstrate and report the isolation and identification of endophytic bacteria from the flower of *Nyctanthes arbor-tristis*, alongside its nanoparticle synthesis and antimicrobial efficacy. Hence, our result implies that the synthesized AgNPs have the tendency to be utilized as an effective antimicrobial agent against human pathogens and other biological applications.

Keywords: *Nyctanthes arbor-tristis*; AgNPs biosynthesis; *E.coli*; endophytic bacteria; antimicrobial agent

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Conflicts of Interest

The authors declare no conflict of interest.