

Green Synthesized Nanoparticles from *Borassus flabellifer* Linn: Alternative to Antimicrobials[†]

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Abstract: Antimicrobials resistance is a life-threatening issue growing globally. Microorganisms are developing resistance against antibiotics, antivirals, antifungals, and antiparasitics drugs in humans, animals, birds, and plants while treating for prevention and microbial diseases. This antimicrobial resistance is becoming a great challenge in the future. In the present study, the seed cotyledon of the endemic tree *Borassus flabellifer* Linn was used for the green synthesis of silver nanoparticles (AgNps). Primarily phytochemicals present in the seed cotyledon were tested. This study mainly investigates the efficiency of silver nanoparticle preparation from 1mM aqueous AgNO₃ using 1% extracts of seed cotyledon in 1:1 (v/v) ratio. The synthesized nanoparticles were characterized by UV- visible spectrophotometer; Fourier transforms infrared spectrometer (FTIR) analysis was carried out to determine the size, influencing capping agent, and reducing agent in the green material. The green synthesized silver nanoparticles are studied with two strains of multidrug-resistant *Escherichia coli* using the good diffusion method. The result shows a positive response, the zone of inhibition was observed, and it was compared with Antibiotic Ampicillin. The result represents hope for the development of a drug for antimicrobial resistance in the future.

Keywords: *Borassus flabellifer* Linn; green synthesis; silver nanoparticles; antimicrobials.

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Conflicts of Interest

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