

Phytofabrication of silver nanoparticles from weed plant of *Amaranthaceae* and its antimicrobial activity

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ABSTRACT

The synthesis of bio-inspired nanoparticles is an important branch in nanotechnology. Different biological methods are used for the production of silver nanoparticles due to their several applications. One of the most significant applications of silver nanoparticles is their use as an antimicrobial agent. In this work, we describe a cost effective and environment friendly approach to explore the synthesis of silver nanoparticles from leaf extract of weed plant *Amaranthaceae*. The synthesized nanoparticles have been characterized on the basis of Fourier transform infrared spectroscopy, UV-Vis spectroscopy, Scanning electron microscopy and Zeta potential. The presence of a characteristic surface plasmon resonance absorption band at 425 nm in UV-Vis reveals the reduction of silver metal ions into silver nanoparticles. The antibacterial property of silver nanoparticles has allowed its wide range of application from disinfecting devices. The synthesized silver nanoparticles showed antimicrobial activity against different microorganisms.