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Green Synthesis and Characterization of Silver Nanoparticles Using Zederone from the Rhizomes of *Curcuma caesia* Roxb. and Catalytic Activity

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Abstract

Zederone has been isolated from the rhizomes of *Curcuma caesia* Roxb. and used for the green synthesis of silver nanoparticles (AgNPs). Various characterization techniques such as UV–Vis spectroscopy, Fourier transform infrared spectroscopy (FT-IR), X-ray diffraction (XRD), electron paramagnetic resonance (EPR), energy-dispersive X-ray (EDX) spectroscopy, scanning electron microscopy (SEM), transmission electron microscopy (TEM), and selected area electron diffraction (SAED) were used to confirm the reduction of Ag^+ and the formation of AgNPs. The catalytic activity of the synthesized AgNPs is established in the reduction of DPPH by BHT + AgNPs. The UV–Vis spectra were recorded at regular intervals of time.

Keywords: Zederone, *Curcuma caesia* Roxb., Nanoparticles, Green synthesis

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