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Synthesis, Characterization and Antimicrobial activity of Silver nanoparticles using *Santalum album* aqueous seeds extract

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Abstract : Silver nanoparticles play a significant role in the field of biology and exploited in medicine for treatment burn, skin diseases and also for making dental materials. The present work investigated the synthesis of silver nanoparticles using *Santalum album* aqueous seeds extract. The formation of silver nanoparticles was confirmed by visual observation, UV-Vis spectroscopy, FTIR and TEM analysis. Appearance of dark brown colour indicated the synthesis of silver in the reaction mixture. The silver nanoparticles were found to be circular, spherical and triangular in shape with variable size, as evident by TEM studies. The nanoparticles appeared to be associated with some chemical compounds which possess hydroxyl and carbonyl groups, confirmed by FTIR. The synthesized nanoparticles were tested for antibacterial and antifungal activities using agar well diffusion method. The AgNPs at 40 μ l showed potent antifungal activity against *C. albicans* (16.0 \pm 0.0), *T. rubrum* (14.83 \pm 0.28) and *E. coli* (21.0 \pm 0.0). AgNPs inhibit the growth of human pathogens which are responsible for causing superficial fungal infections. This is the first and novel report of silver nanoparticles synthesised from *S. album* aqueous seeds extract and their antimicrobial activity.

Keywords: *Santalum album*, medicinal plant, silver nanoparticle, antimicrobial activity.

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