

## Green Synthesis of Silver Nanoparticles from *Salacia chinensis* and Analysis of its Antioxidant and Antimicrobial Potential

Abhijith P\*, Bhavya G, Ashika P and Geetha N

Eco Biotech Lab, DOS in Biotechnology, University of Mysore, India

In the current era of research Green synthesized nanoparticles are playing a vital role in medicine and other field. The current research was concentrated on green synthesis of Ag-NPS' by exploiting *Salacia chinensis* leaf extract. The leaf extract was synthesized by boiling water method, followed by incubation at room temperature in light conditions (usually synthesis of AgNPs are carried out in dark) in AgNO<sub>3</sub> solution. Synthesized particles were characterized using XRD, SEM-EDX, FTIR and UV-Vis spectroscopy. This revealed that synthesized particle had a size of 56 to 151nm, face centered cubic - crystalline structure, with polymorphic shape; rod, spherical, round and polygonal. The antioxidant potential of the synthesized nanoparticles was compared against crude extract using DPPH assay, it was found that G-AgNPs has potent scavenging activity than crude. Antibacterial potential of the particles tested against *E. coli*, *Vibrio* sp, *Salmonella* sp, *Candida albicans* and *Candida tropicalis* by micro-titer plate method, showed that the G-AgNPs had moderate growth inhibition on *E. coli* but *Vibrio* sp. and *Salmonella* sp. showed more resistance but potent antifungal activity against *C. albicans* and *C. tropicalis*, which are found to be resistant to clinical antifungal agents like Fluconazole. These findings could lead to a better understanding of the antifungal properties of AgNPs synthesized through green synthesis mode using *Salacia chinensis*, also this could pave way to developing better drugs for resistant pathogenic yeasts and bacterial strains.