

# Biosynthesis and Characterization of Silver Nanoparticles from *Pisonia Alba* and their Antibacterial Activity Against Pathogenic Bacteria<sup>†</sup>

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**Abstract:** Silver nanoparticles (AgNPs) synthesized biologically using plant extracts are being widely used in the medicinal field for treating various diseases, especially bacterial infections. Recently, silver nanoparticles' efficiency has been enhanced due to the development of antibiotic resistance against many pathogenic bacteria. Several salts of silver and its derivatives are employed for the production of antimicrobial agents, and the action of silver nanoparticles against microorganisms is utilized even in household products like containers, food storage, and textiles. Biosynthesis of silver nanoparticles is done using *Pisonia Alba* and to confirm the synthesis of the nanoparticle, various methods of characterization are done, *i.e.*, UV-Visible spectroscopy, FTIR (Fourier transform infrared spectroscopy), SEM(scanning electron microscopy), etc. *Pisonia* is a genus of flowering plants in the “four o'clock” flower family, Nyctaginaceae. *Pisonia Alba*, commonly called the lettuce tree, is a small, evergreen foliage tree or a large shrub found in our gardens. Silver nanoparticles are synthesized from the leaf of *Pisonia Alba*. Post synthesis of silver nanoparticles, its antibacterial activity is tested using the disc diffusion method. The cultures used to test the antibacterial activity are *Enterobacter*, *E.Coli*, *Klebsiella*, *Salmonella*, and *Pseudomonas*. The synthesized Ag-NPs can be used for various applications owing to their eco-friendliness, non-toxic nature, and compact ability in pharmaceutical and other applications.

**Keywords:** biosynthesis; *Pisonia Alba*; FTIR; ornamental plant; characterization; antibacterial activity.

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## Conflicts of Interest

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