

Antibacterial Effect of Silver Nanoparticles on *Pseudomonas Aeruginosa* Bacteria

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Abstract: Silver nanoparticles (AgNPs) can simply be synthesized by laser ablation. It plays a significant role in the field of physics, biology, and medicine. The synthesized silver nanoparticles were confirmed by visual observation, optical spectroscopy, and TEM analysis. The synthesized AgNPs were tested for antibacterial activity against *Pseudomonas* microplate assay and agar well diffusion method. The AgNPs at $1 \mu\text{gml}^{-1}$ and above showed noticeable antibacterial action for mainly following long incubation periods. In order to inspect the synergetic effect of laser light with AgNPs, 405 nm laser light (10mW) was used to irradiate bacterial suspension containing ($16 \mu\text{gml}^{-1}$) of AgNPs. Laser light elevates the cytotoxicity of nanoparticles.

Keywords: silver nanoparticles, antibacterial activity, nanoparticles-laser synergism.

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