

Antibiofilm Activities of Article Biogenic Silver Nanoparticles Against Candida albicans

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Abstract: Biofilms are microbial colonies that are encased in an organic polymeric matrix and are resistant to antimicrobial treatments. Biofilms can adhere to both biotic and abiotic surfaces, allowing them to colonize medical equipment such as urinary and intravenous catheters, mechanical heart valves, endotracheal tubes, and prosthetic joints. *Candida albicans* biofilm is the major etiological cause of the pathogenesis of candidiasis in which its unobstructed growth occurs in the oral cavity; trachea, and catheters that progress to systemic infections in the worst scenarios. There is an urgent need to discover novel biofilm preventive and curative agents. In the present investigation, an effort is made to observe the role of cyanobacteria-derived AgNPs as a new antibiofilm agent with special reference to candidiasis. AgNPs synthesized through the green route using *Anabaena variabilis* cell extract were characterized by UV–visible spectroscopy. The nanoparticles were spherical in shape with 11–15 nm size and were monodispersed. The minimum inhibitory concentration (MIC) of AgNPs was obtained at 12.5 µg/mL against *C. albicans*. AgNPs 25 µg/mL showed 79% fungal cell membrane permeability and 22.2% ROS production. AgNPs (25 µg/mL) also facilitated 62.5% of biofilm inhibition and degradation. Therefore, AgNPs could be considered as a promising antifungal agent to control biofilm produced by *C. albicans*.