

BIOSYNTHESIS OF SILVER NANOPARTICLES USING *ASPERGILLUS TERREUS*

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ABSTRACT : The biosynthesis of nanoparticles becomes increasing utility due to biologically friendly and specific effective. In this study, silver nanoparticles (AgNPs) were biosynthesized by a reduction of Ag⁺ ion with the cells free mycelia of *Aspergillus terreus* isolated from the soil. The biosynthesis of AgNPs was observed via ultraviolet-visible spectroscopy extending from 300 to 900 nm, Atomic Force Microscopy (AFM) analysis showed diameter: 25.09 nm productions these silver nanoparticles appropriate application for delivering with *A. terreus*. Scanning Electron Microscope (SEM) displayed the occurrence small and spherical- shape particles of multiple sizes contained by the nanometer measure, these results confirmed probability the antimicrobial of AgNPs was evaluated.

Key words : AgNPs, atomic force microscopy, scanning electron microscope, antimicrobial, *Aspergillus terreus*.

INTRODUCTION

Silver nanoparticles (AgNPs) are definite as particles through the diameter size a smaller than 100 nm and the situation can be synthesized finished chemical, physical and biological technique (Guzmán *et al*, 2009). Nanotechnology remains considered a developing technology due to the prospect to advance well-recognized products and to generate new products with completely new characteristics and purposes with enormous possible in a wide variety of applications. Furthermore, to various industrial procedures, great innovations are predicted in information and statement technology, in biology besides biotechnology, in nanosciences besides nanoengineering invention in the arenas of pharmaceuticals, treated food, chemical engineering, great-performance supplies, electronics accuracy mechanics, optics, energy manufacture and environmental knowledges. Nanotechnology is a developing and dynamic playing field where above 50,000 (Sun and Xia, 2002). Novel supplies and new-engineered exteriors allow making harvests that perform healthier. New medical behaviors are emerging for lethal diseases (Gratzel, 2001). The range of profitable products obtainable today is very wide, comprising metals, ceramics, polymers, clever textiles, makeups sunscreens, electronics, coats and varnishes. Nevertheless new methodologies besides instrumentation have to be

established in order to raise our knowledge and evidence on their belongings (White *et al*, 2011). Nanomaterials necessity examined for possible effects on health as a substance of protection, and their possible ecological impacts. The increase of specific direction documents at a worldwide level for the protection evaluation of nanotechnology harvests is strongly recommended. The possible medical applications are mainly in diagnostics disease (analysis and imaging, monitoring, the availability of more durable and better prosthetics, and new drug-delivery systems) for potentially destructive drugs (Groneberg *et al*, 2006). While products built on nanotechnology are truly reaching the market, adequate knowledge on the related toxicological risks is immobile lacking. Plummeting the size of arrangements to nanolevel effects in distinctly different possessions. As well as the chemical structure, which largely orders the intrinsic toxic belongings, very small size looks to be a dominant pointer for extreme or toxic effects of elements from a regulatory idea of view; a risk organization strategy is previously a requirement for totally medical technology applications. The methods and the tools which are presently used to describe and manipulate nanostructures are obtainable (Park, 2007). Biologically synthesized AgNPs be necessary received much attention among researchers lately, due to that environmental friendly, inexpensive and does not practice or produce any poisonous chemicals during synthesis method. Various natural bases involved