

Microbial synthesis of silver nanoparticles from *Aspergillus tamarii* and its antimicrobial activity

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ABSTRACT

Nanobiotechnology is a multidisciplinary field which commonly involves scientific and engineering principles in order to exploit materials and molecules at nanoscale. Development of reliable and eco-friendly process for synthesis of metallic nanoparticles is an important step in the field of application of nanotechnology. One of the options to achieve this objective is to use natural processes such as use of biological systems. In this work we have investigated extracellular biosynthesis of silver nanoparticles using the fungus *Aspergillus tamarii*. Among the microorganism fungi has been gaining a lot of consideration of the researchers due to its advantage over bacteria viz. posses high wall binding capacity, better intracellular metal uptake capabilities and require simple nutrient to grow. The synthesis process was quite fast and silver nanoparticles were formed within five hours of silver ion coming in contact with the cell filtrate. The AgNPs formed were characterized using UV-Visible spectrum, FTIR, and SEM, Zeta potential, DSC and TGA. And we also found that the synthesized silver nanoparticles are effective growth inhibitors in various microorganisms.