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## Mycogenesis of silver nanoparticles using selected strains of opportunistic fungi and their efficacy against aspergillosis causal agents

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Four strains of opportunistic fungi isolated from aspergillosis suspected patients at Assiut university chest department, proved to possess high enzymatic ability, were tested for silver nanoparticles producing ability. *Aspergillus niger* EN2 KY6095, *A. flavus* EN1 KY609, *A. terrus* EN3 MF 852635 and *A. fumigatus* filtrates were challenged with 1mM silver nitrate aqueous solution. C EN1 KY609, *A. terrus* EN3 MF 852635 and *A. fumigatus* proved to produce silver nanoparticles, whereas, *A niger* EN2 KY6095 was not able to induce AgNP. The process was fast and stable in the case of *A. terrus* and *A. flavus*. UV-visible spectrum peaks were shown at 445 and 430, respectively; corresponding with the plasmon absorbance of AgNP. TEM micrographs showed well dispersed AgNPs ranging of 50-30 nm. Digital Laser Scattering (DLS), Fourier-transform infrared spectroscopy (FTIR) and X-Ray Diffraction confirmed the production of AgNPs by *A. flavus* and *A. terrus* that showed high and stable production of AgNPs. Silver nanoparticles has an antibacterial effect on different bacterial strains. Its efficacy against gram-negative bacteria is higher than Gram positive bacteria. Antifungal assay of AgNPs showed significant advantages over conventional antifungal compounds.

**Keywords:** Silver nanoparticles, opportunistic fungi, *A. terrus*, *A. flavus*.

### Biography

Alaa A Yasien is currently a Master student at Faculty of Science, University of Sohag, Egypt. She has B.Sc. in microbiology and chemistry (2011), and applied microbiology diploma (2012) from University of Sohag, Faculty of Science, Sohag, Egypt. Through her study, she developed interest in studying the role of fungi in the field of nanotechnology. Her research is based on how nanoparticles are produced in a more stable and effective biological way on pathogenic microorganisms.

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