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## Honey as a novel bio-mediated synthesis of silver nanoparticles and promising of its antibacterial activity

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In recent years, researchers in the field of nanotechnology are finding that metal nanoparticles have all kinds of previously unexpected benefits. Synthesis of inorganic nanoparticles by biological systems (nanobiotechnology) makes nanoparticles more biocompatible and environmentally benign. A novel approach of synthesis of silver nanoparticles (Ag NPs) using a bio-derived product-honey. Honey was chosen as the eco-friendly reducing and stabilizing agent. Nanoparticles of different sizes could be obtained and the solution turned to black by time. Characterization of the Ag NPs was done by UV-Visible Spectroscopy, Fourier transform infrared spectroscopy (FTIR), Dynamic light scattering analysis (DLS), transmission electron microscopy (TEM) and scanning electron microscope (SEM) imaging. The colloid obtained at a pH of 8 was found to be spherical uniformly distributed with some agglomeration which is a significant advancement in biosynthesis. An intense surface plasmon resonance band at 400 nm in the UV-visible spectrum clearly revealed the formation of Ag NPs. Antibacterial activity of silver nanoparticles AgNPs was investigated against six pathogenic strains; *Escherichia coli*, *Proteus mirabilis*, *Klebsilla pneumonia*, *Pseudomonas aeruginosa* (Gram-negative), *Staphylococcus aureus*, *Streptococcus mutans* (Gram-positive). The results suggest that the synthesized Ag NPs act as an effective antibacterial agent, and can potentially be used in human contacting areas.

### Biography

Ghada Amin Youssef is an associate Prof. of Applied Microbiology at University of Alexandria, Egypt where she studies microbiology and biological science. She graduated from Faculty of Science, with honor bachelor degree. She did her postdoctoral research at Alex. University. She has attended many training courses, workshops and more than 10 conferences around the world ended with EMBO International Conference "Fission Yeast" at (UK) London University, Senate house (24-29/June/2013) as an international conference. She has published more than 25 papers in reputed journals and has been serving as reviewer of AJMR.

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