Abstract

In this study, a rapid and eco-friendly synthesis of silver nanoparticles (AgNPs) has been reported using aqueous extract of *Vaccinium arctostalhylos* seed. The extract acts as reducing as well as stabilizing agent. The experimental Factors affected on the biosynthesis, such as plant extract volume, silver nitrate salt concentration and reaction tim were investigated using Ultraviolet-Visible (UV-Vis) analyses. The UV-Vis spectrum of AgNPs colloid showed a plasmon band at 433 nm in the optimized conditions (3 ml extract of *Vaccinium arctostalhylos* at 3 min reaction time exposure to sunlight and 1mM concentration of silver nitrat salt) which confirmed the reduction of silver ions to AgNPs in the aqueous media.The formation of AgNPs were also confirmed using X-ray diffraction (XRD), Transmission electron microscopy (TEM) and fourier transform infrared spectroscopy (FTIR). According to the XRD analysis, the particle size of the prepared Ag NPs was found to be in the range of 7 to 16 nm. The TEM images showed a uniform distribution of the AgNPs with spherical shapes. The FTIR spectrum revealed the presence of the various functional oxygenated compounds such as carboxyl and hydroxyl and nitrogen factors. Finally, the antibacterial properties of AgNPs were evalted against four bacteria, *aureus Staphylococcus* and *Bacillus Subtilis* and *Escherich Coli* and *Enteritidi Salmonella*. The results showed that the antibacterial activity of AgNPs is different for each microorganism.

Key words: Biosynthesis, Silver nanoparticles, *Vaccinium arctostalhylos*, antibacterial property, *Staphylococcus aureus, Escherichia coli, Bacillus Subtilis*

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The possibility plant synthesis of silver nano particles using some medicinal plants and the evaluation anti-bacterial treatment

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