



Abstract

Silver nanoparticles (Ag NPs) have been created using an aqueous extract of *Aloe vera* (*Aloe barbadensis miller*) leaves. UV-Visible, Fourier-Transform Infrared Spectroscopy (FTIR), and Scanning Electron Microscopy (SEM/EDX) have all been used to characterize the produced nanoparticles. For Ag NPs, the SEM exhibits consistent spherical shape and Size 40 to 70 nm. The agar well diffusion method was used to assess the antibacterial efficacy of biologically produced Ag NPs against the test pathogens *P. aeruginosa*, *B. subtilis*, *B. licheniformis*, and *E. coli*. *P. aeruginosa*, *B. subtilis*, *B. licheniformis*, and *E. coli* are a few examples of human pathogenic strains that were effectively inhibited by biogenically created (Ag NPs) antibacterial activity. *P. aeruginosa* was most effectively inhibited by Ag NPs. Against *P. aeruginosa*, the highest ZOI (20 mm) was noted. The lowest ZOI (14) against *E. coli* was noted. All of the Ag NPs activity was significant when compared to control, according to the One-way ANOVA.