

ABSTRACT

Infectious and microbial diseases have always been detrimental to human health and result in millions of mortalities every year. The resistance of microorganisms responsible for these diseases is increasing against drugs and antibiotics already available in the market. Therefore, researchers are trying to discover new antibiotics with greater effectiveness and better results against these diseases. Moreover, chemical substances from natural sources are considered safer for human health. The current study is conducted to estimate antibacterial potential of clove extract conjugated silver nanoparticles (CE-AgNPs). Silver nanoparticles (AgNPs) were prepared by clove extract and characterized employing a particle size analyzer, UV spectrometry, FTIR, XRD and SEM. The size of light-assisted NPs was 78.00 nm. Silver nanoparticles showed unparalleled antibacterial results against ten bacterial strains. Concentration-based antibacterial bioassay expressed significant bactericidal activity at lower concentrations of CE-AgNPs. Furthermore, significant antibacterial activities were observed for the CE-AgNPs prepared at neutral (07) and basic (12) pH while different temperature (5, 37, and 65°C) assisted clove extract-AgNPs showed non-significant results. Above mentioned findings of the study suggest that CE-AgNPs possess exceptional antibacterial potential.