عنوان مقاله:

Green Synthesis of Silver Nano-particles Using Kelussia odoratissima Mozaff. Extract and Evaluation of its Antibacterial Activity

محل انتشار:

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خلاصه مقاله:

In this research Kelussia odoratissima Mozaff. leaf extract was used for the green synthesis of silver nanoparticles (AgNPs). At first we compared antioxidant activity of different extracts of K. odoratissima. Then solution containing silver nitrate was treated with the extract which showed high antioxidant activity. Synthesized AgNPs were evaluated by analyzing the excitation of surface plasmon resonance. TEM analysis was also used for nanoparticle characterization. Antibacterial activity of the solution containing AgNPs was measured by microdilution test. Common food contaminant bacteria such as gram-positive (Staphylococcus aureus, Bacillus cereus, Listeria monocytogenes) and gram-negative (Escherichia coli O۱۵۷: H۷, Salmonella enterica and Pseudomonas aeruginosa)were used for the evaluation. The aqueous extract showed the highest antioxidant activity and the solution was used for the green synthesis of AgNPs. The particle diameters were calculated to be ۲۰-۴۰nm with -۱۷ to -۱۹.۹ mV zeta potential. The TEM micrographs showed that the AgNPs are nearly spherical in shape and highly monodispersed. MIC of the AgNPs against gram-positive and gram-negative bacteria was between ۰.۰۱۲-۰.۰۲۵ and ۰.۰۰۶-۰.۰۱۲ mg/ml respectively.

کلمات کلیدی:

Kelussia odoratissima, Green Synthesis, silver nanoparticles, Antibacterial activity, Electron microscopy