

## عنوان مقاله:

Green Synthesis of Silver Nanoparticles Using Nasturtium officinale L. Extract And Analysis of Their Antibacterial Activity Against Nosocomial Pathogens

## محل انتشار:

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## خلاصه مقاله:

**Background & Objective:** The green synthesis of the silver nanoparticles (AgNPs) is an eco-friendly and straightforward synthesis method. This study aimed to investigate the green synthesis of AgNPs using Nasturtium officinale leaf extract and analysis of their antibacterial activity against some nosocomial pathogens. **Materials & Methods:** The obtained AgNPs were characterized using UV-visible spectroscopy, X-ray diffraction (XRD), and scanning electron microscope (SEM). In addition, the antibacterial activity of synthesized AgNPs and N. officinale leaf extract were performed against five bacterial strains (Staphylococcus epidermidis, Escherichia coli, Staphylococcus aureus, Klebsiella pneumoniae and Pseudomonas aeruginosa) by agar disk diffusion assay and minimum inhibitory concentration test. **Results:** The green synthesized AgNPs had significant antimicrobial activity against all studied bacteria. In addition, greater inhibition activity was observed against E. coli and P. aeruginosa rather than other bacteria. **Conclusion:** The synthesized AgNPs revealed a special antibacterial effect against selected bacteria, compared to leaf extract of N. officinale. Identifying new antibacterial agents with profound efficacy against antibiotic-resistant opportunistic pathogens is essential. These data provide an eco-friendly and rapid green approach for AgNPs synthesis and the potential of AgNPs for use in drug development against nosocomial infections.

## کلمات کلیدی:

Nosocomial pathogens, Silver nanoparticles, Nasturtium officinale

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1702278>

