



HP-18: Green Synthesis of SeNPs Using Leaves of *Sonchus maritimus* aqueous extract and their *invitro* Biological Applications

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Abstract

This investigation aimed to characterize of selenium nanoparticles synthesized by green approaches using *Sonchus maritimus* L. extract and evaluate their antioxidant and antibacterial properties. Moreover, acute toxicity of nanoparticles was performed in Wistar rats. The synthesis of SeNPs was confirmed by Scanning Electron Microscopy and Energy Dispersive X-ray analysis. Antioxidant activities of *S. maritimus* and SmE-SeNPs were determined by DPPH and FRAP assays. Antibacterial activities were tested against Gram positive and negative pathogen bacteria. The SEM results showed that SeNPs had a spherule-like structure reaching up to 26.48 nm. In addition, *S. maritimus* extract and SmE-SeNPs had DPPH scavenging activity and reducing power. SeNPs exhibited activities against *Escherichia coli* and *Staphylococcus aureus*. In conclusion, *S. maritimus* can be considered as biocatalyst stabilizers for the biosynthesis of SeNPs which might be used in several pharmaceutical and medical applications due to their biological efficiency.

Keywords: SeNPs, *Sonchus maritimus*, characterization, DPPH, FRAP.