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Green synthesis of silver Nanoparticles (agnps), structural characterization, and their antibacterial potential**Rizwan Asif***Qarshi University Lahore, Pakistan*

In the field of nanotechnology, the metallic nanoparticles are of remarkable interest because of their unique electronic, magnetic, chemical, and mechanical properties. In the present work, silver nanoparticles (AgNPs) were synthesized using bio-reduction method. Silver nitrate was used as metallic precursor and the extract of *Moringa oleifera* leaves with different concentrations was used as reducing as well capping agent. The extract exhibited strong potential in rapid reduction of silver ions for the synthesis of silver nanoparticles. The synthesized silver nanoparticles were characterized by UV-visible spectroscopy, X-ray diffraction (XRD), and scanning electron microscopy (SEM) techniques. The absorption SPR peaks appeared in the range of 415 to 439 nm. SEM analysis exhibited that particles were spherical in shape with size distribution range from 10 nm to 25 nm. The synthesized silver nanoparticles were pure crystalline in nature as confirmed by the XRD spectra with average crystallite size 7 nm. In vitro antibacterial activity of the prepared silver nanoparticles colloidal samples as well the extract was studied using different concentrations of AgNPs (C1 = 100 µg/ml, C2 = 50 µg/ml, C3 = 25 µg/ml) by well diffusion method against Gram negative *Escherichia coli*. The antibacterial performance was assessed by measuring the zone of inhibition (ZOI). The results suggested that AgNPs prepared by green approach can be considered as an alternative antibacterial agent.

Biography

Rizwan Asif currently working as an assistant professor at Qarshi University in Lahore, Pakistan. He completed his PhD in Microbiology. His expertise on Drug designing, Clinical trial of Herbal Medicine, Evaluation of medicinal plants activities like antibacterial activities, phytochemical analysis and antioxidants activities.