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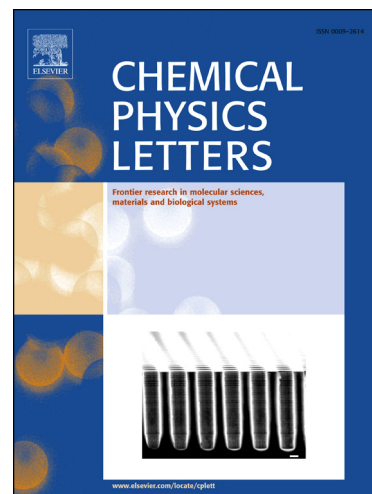
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Physiochemical Charge Stabilization of Silver Nanoparticles and Its Antibacterial Applications

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Abstract

Environmental standardization and stabilization of surface charges of silver nanoparticles (AgNPs) is important in biological systems and interest in bio-interfacial interaction. Different synthesized AgNPs in chemical reduced (AgNO_3 (0.01, 0.1 and 0.5 M); NaBH_4 and $\text{Na}_3\text{C}_6\text{H}_5\text{O}_7$) garnered for analysis of physico-chemical charge stabilization by means of different pH (1 to 13) and ionic interferences (NaCl , $\text{Ca}(\text{NO}_3)_2$, Na_2CO_3 and NaNO_3). The uniform sized (size: ~22 nm) and highly charged (zeta potential: -37.9 mV) AgNPs with uniform dispersion remains unaltered in high ionic interferences. Highest antifungal activity of AgNPs against *Candida albicans* and moderate activity against *Staphylococcus aureus* are correlated.

Keywords: silver nanoparticle, chemical reduction, zeta potential, ionic stability, antimicrobial activity.

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