



Research article

Zinc Oxide nanoparticles formation, characterization and biological approach

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Abstract

In the present work we used two chemical methods for the synthesis of zinc oxide nanoparticles (ZnONPs). The synthesized ZnONPs was detected by precipitation methods and characterized using UV-vis spectroscopy and Transmission electron microscopy (TEM) to determine nanoparticles size and shape. The antimicrobial activity and minimum inhibitory concentration (MIC) of ZnONPs were carried out as biological approach. Our results showed that, the three concentrations of ZnO powder (0.1, 0.5 and 1.0 %) and 0.1 M ZnSO₄ synthesized ZnONPs are recorded as antimicrobial potential activity against tested pathogenic strains models (Gram positive, Gram negative and filamentous fungi). Characterization of ZnONPs revealed that, it was absorbed at rang of 373 to 374 nm. Also, the resulted showed that, ZnO nanoparticle from zinc powder at concentration of (0.1 %) had average size 15-42 nm while, other from zinc sulfate powder had average size 17-97 nm.