EFFECT OF DIFFERENT SURFACE MODIFYING AGENTS ON ANTIMICROBIAL PROPERTIES OF ZnO NANOPARTICLES

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The aim of this study was to find whether ZnO nanoparticles with surface modification changes properties compare to ZnO without modification. Antimicrobial, cytotoxicity and inflammatory cytokine production of modified ZnO nanoparticles were evaluated. In this work, ZnO nanoparticles were prepared by a wet chemical method. Then, these nanoparticles were modified in their surface area using 3 aminopropyltriethoxysilane (APTES) and dimethyl sulfoxide (DMSO) as modifying agents through a chemical hydrolysis method. According to infrared spectroscopy analysis, the ZnO structure was not affected after modification. Antibacterial assays demonstrated that APTES modification is better to induce antimicrobial effect against Gram negative bacteria (Enterobacter aerogenes, Escherichia coli and Klebsiella oxytoca) than Gram positive ones.

Keywords: SURFACE MODIFYING AGENTS, ANTIMICROBIAL PROPERTIES, ZNO NANOPARTICLES

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