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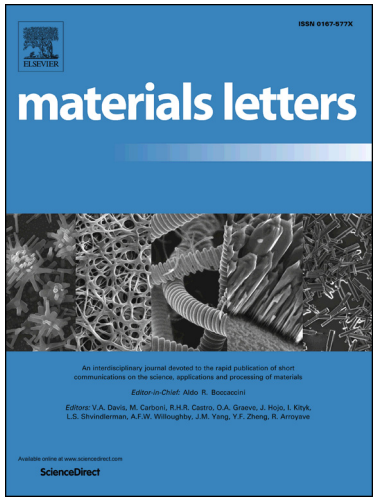

Synthesis of zinc oxide nanoparticles (ZnONPs) by aqueous extract of *Amaranthus caudatus* and evaluation of their toxicity and antimicrobial activity

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Synthesis of zinc oxide nanoparticles (ZnONPs) by aqueous extract of *Amaranthus caudatus* and evaluation of their toxicity and antimicrobial activity

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Abstract

In the present study zinc oxide nanoparticles (ZnONPs) were synthesized by the extract of the plant, *Amaranthus caudatus.* ZnONPs were characterized by FTIR and SEM coupled with EDX. Among the various concentrations of ZnONPs administered, 10mg/ml or more caused deformities and less survival rate. ZnONPs were found to influence the normal development of zebrafish embryos in a dose dependent manner. The ZnONPs were found to exhibit anti-bacterial activity; the activity was more towards Gram positive bacteria (*S. epidermidis)* than the Gram negative bacteria *(E. aerogenes*). The low concentrations of ZnONPs could be used as a therapeutic agent for diabetes mellitus.

Key words: *Amaranthus caudatus*, SEM-EDX mapping, Zinc Oxide Nanoparticles (ZnONPs), zebrafish, toxicity, Diabetes Mellitus

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