

Macromolecular Symposia / Volume 400, Issue 1 / 2100025

Research Article

Influence of Eucalyptus Leaves Extract on Antibacterial Activity of ZnO Nanoparticles

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First published: 22 December 2021

<https://doi.org/10.1002/masy.202100025>

Abstract

In the current research work, zinc oxide nano particles are synthesized by simple precipitation method and studied its antibacterial activity. The antibacterial activity can be successfully enhanced for some kind of bacterium after the addition of eucalyptus leaves extract. The structural, morphological, and elemental properties of synthesized material and the effect of eucalyptus leaves extract on these properties are studied by using X-ray diffraction (XRD), Field Emission Scanning electron Microscopy (FESEM), and elemental analysis (EDAX). Enhanced crystalline size and porosity is observed after the addition of eucalyptus leaves extract while synthesizing zinc oxide (ZnO). In addition, eucalyptus leaves extract assists to avoid agglomeration of ZnO nano particles. Role of eucalyptus leaves extract in the antibacterial activity of synthesized ZnO nano particles are studied against gram positive bacterium (*Bacillus*) and gram negative bacterium (*Escherichia coli*). It reveals that after addition of eucalyptus leaves extract, antibacterial activity against gram positive bacteria (*Bacillus*) is enhanced. However, it does not show any antibacterial activity on a gram negative bacterium (*E. coli*). The eucalyptus leaves extract may be responsible for the resistance against *E. coli*.

Conflict of Interest

The authors declare no conflict of interest.

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Data Availability Statement

Data openly available in a public repository that issues datasets with DOIs.

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