Available online at www.joac.info

ISSN: 2278-1862

Journal of Applicable Chemistry

2018, 7 (1): 112-118

(International Peer Reviewed Journal)

Biosynthesis of ZnO Nanoparticles using *G. nepalense* Leaf Extract, Characterization and their Antibacterial Activity

PP Badoni, Jyoti Kundal and Goutam Kumar*

*Department of Chemistry, HNB Garhwal University, Campus Pauri, Uttarakhand-246001, **INDIA**

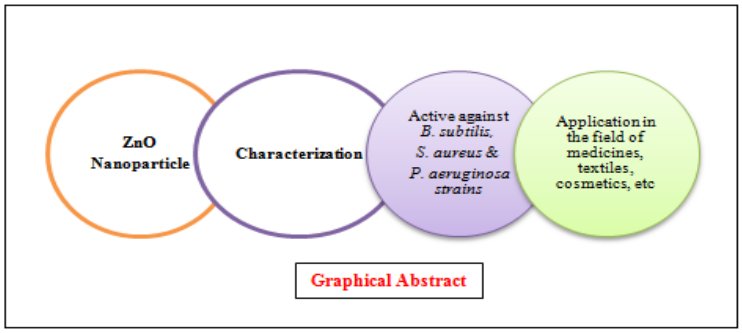
Email: goutamkmmrr17@gmail.com

Accepted on 16th December 2017, Published online on 27th January 2018

ABSTRACT

In this research work, crystalline nature and formation of ZnO nanoparticles using G. nepalense leaf extract was confirmed by XRD technique. UV-Vis spectrum showed the presence of characteristic absorption peak at 388nm of ZnO nanoparticles. Presence of water soluble phytochemicals which are responsible for the reduction of Zinc ions and stability of ZnO nanoparticles, were predicted by FTIR study. Antibacterial activity was investigated by determining the diameter of zone of inhibition against Bacillus subtilis, Staphylococcus aureus and Pseudomonas aeruginosa strains using agar well diffusion method. Diameter of zone of inhibitions of ZnO nanoparticles at 35, 17 and 40 mm against Bacillus subtilis, Staphylococcus aureus and Pseudomonas aeruginosa, respectively, were measured. In another study, MIC and MLC values were also determined.

Graphical Abstract:



Keywords: Crystalline, reduction, antibacterial activity.