EuroSciCon

6th Edition of International Conference on

Antibiotics, Antimicrobials and Resistance

October 11-12, 2018
Edinburgh, Scotland

Farzana Rashid et al., J Infec Dis Treat 2018, Volume 4
DOI: 10.21767/2472-1093-C2-005

Antimicrobial effect of doped ZnO nanoparticles against clinical isolates

Farzana Rashid, Hunaiza Tahir, AnamAbid, IqraPervaiz, NaeemLatif and **SafiaIftikhar**
Lahore College for Women University, Pakistan

Microbial drug resistance caused by different pathogenic bacteria has been a major threat to mankind. Therefore, the development of more efficient materials with enhanced antimicrobial activity is of great significance. Nanoparticles (NPs) are thus ideal antimicrobials: ZnO nanoparticles are well known and are regarded as bio-safe materials. The present study is designed to study antimicrobial behavior of undoped and doped (Mn and Co) ZnO nanoparticles and their combined effect with β-lactam antibiotics against differentclinical isolates. The antimicrobial activity of doped-ZnO NPs was determined at different percent doping including 5 mol%, 10 mol%, 15 mol% and 20 mol% and pure ZnO NPs were studied at different concentrations by Kirby's disc diffusion assay. The cytotoxicity and antioxidant activity of undoped and doped-ZnO NPs was investigated by Brine shrimp lethality Assay and α-α-diphenyl-β-picrylhydrazyl (DPPH) scavenging activity respectively. The results showed that antimicrobial activity was increased by the doping of ZnO nanoparticles, as the zone of inhibition against *Escherichia coli* increased from 8 to 14mm with doping. The obtained results thus suggested that antimicrobial activity and antioxidant potential was enhanced by doping of ZnO NPs while the cytotoxicity analysis showed no toxic effect of doped-ZnO NPs at lower concentration on *Artemiasalina*. The present study can be used to form different drugs in combination with nanoparticles for their utilization in production of medicines to cope with the emerging drug resistance among pathogenic bacteria.

Biography

Farzana Rashid has completed her PhD from Beijing University of Chemical Technology, China. She has published more than 30 papers in reputed National and International journals and has been serving as an Associate Professor at Lahore College for Women University, Lahore.

dr.farzanarashid@gmail.com