



Review article

A review on green synthesis of silver nanoparticle and zinc oxide nanoparticle from different plants extract and their antibacterial activity against multi-drug resistant bacteria

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Abstract

The green synthesis of the nanoparticle is a fascinating field of modern science. Biosynthesized nanoparticles are much stable and varied in size, shape, and now they are applied in the various field along with the therapeutic application. Different types of metallic nanoparticles are synthesized by Green Technology, but among them, Silver (Ag) and Zinc Oxide (ZnO) nanoparticle have unique properties like Ag np has high conductivity, localized surface plasma resonance, chemical stability and catalytic activity; besides, Ag np has demonstrated tremendous broad-spectrum activity against Multi-Drug Resistant (MDR) bacteria. Additionally, ZnO np showed charismatic antibacterial properties because of its surface reactivity, and it resulted when the particle size was reduced. Reduction of the particle size increased its specific surface area making it a proper antibacterial agent. ZnO np is a non-bio toxic material with photocatalysis and photo-oxidising properties on biological species. ZnO np produce ROS which interacts with the cell membrane of bacterial species, which leads to the inactivation of genetic materials. These properties of Ag and ZnO np makes them a suitable option to the scientists for developing medicines to prevent Multi-Drug Resistant (MDR) microorganisms. Metallic nanoparticles like Silver (Ag) and Zinc Oxide (ZnO) can be produced by the green synthesis method (using plant parts) and synthesized Nano-particles are applied to prevent MDR organisms. This paper highlights on the synthesis of Silver (Ag) nanoparticle and Zinc Oxide (ZnO) nanoparticle from the different plant source and their use in biomedical science and others fields.