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## Abstract

The red-hot field of research is nanotechnology. This techniques deals with size of 1-100nm particles. Nanoparticles due to their different sizes and various shapes used in the medical field, cosmetics, pharmaceutical, textile industry as well as in paints, adhesives and electronics. Metal nanoparticles exhibit excellent antimicrobial activity, dye degradation and used as ant-cancerous drug loading. Various methods are use for nanoparticles synthesis as chemical method, biological method which is also called green method and physical method. In this work silver nanoparticles were synthesized through single step reaction (Green synthesis) by wet chemical reduction method in which doxycycline was used as reducing and capping agent. Characterized the silver nanoparticles by UV/VIS, XRD, SEM and FTIR techniques. Surface Plasmon Resonance of silver nanoparticles was observed at 411nm with 90nm size and homogenized spherical shape. These particles revealed good inhibition zones for Fungi *Candida albicans* and *Candida tropicalis*. Toxicological study is essential before their implementation in practical fields. When nanoparticles penetrated to cell produces reactive oxygen due to which oxidative stress build up and cell death occurs. In this study different concentrations of silver nanoparticles were administered orally for 14 days to mice. Observed organs through histopathological analysis. Toxicity of silver nanoparticles depends on the size. Silver nanoparticles of this work presented low toxicity for different organs (liver, kidney, spleen, heart and stomach) of mice.