

Synthesis of silver nanoparticles by greener way and their applications toward antibacterial activity against *E.coli*

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ABSTRACT

The unique property of the silver nanoparticles having the antimicrobial activity draws the major attention towards the present nanotechnology. The environmentally nontoxic, ecofriendly and cost-effective method that has been developed for the synthesis of silver nanoparticles using plant extracts creates the major research interest in the field of nanobiotechnology. In this work, we have used onion (*Allium cepa*) extract as a reducing and capping agent to minimize the serious environmental pollution problems. The onion extract was mixed with silver nitrate solution and the change in the colour indicates the reduction of silver ions to silver nanoparticles. The size of the nanoparticles was confirmed by various characterization techniques such as UV-Visible spectroscopy, X-ray diffraction (XRD) and Transmission Electron Microscope (TEM). The formed nanoparticles with diameter range between 5-7 nm. The obtained nanoparticles were tested for the antibacterial activity against *E.coli*.