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Research Article

### Synthesis and Characterisation of Antibacterial Silver Nanoparticles

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**Abstract:** D (+) lactose was used in this study for the synthesis of silver nanoparticles which offered an economical and green synthetic route relative to expensive and toxic chemical methods. The UV-Vis was used to monitor the silver nanoparticles formation, which was apparently formed within 3 min with evidence of surface plasmon bands (SPB) at 420 nm. The crystals were equally characterized using X-ray diffraction methods. XRD spectra show the silver nanocrystallites. Moreover, SEM images show the size and the shape of silver nanoparticles. Moreover high electrolytic conductivity of silver nanoparticles was observed. The sample was further screened against *Staphylococcus aureus* and *Escherichia coli*. From the results, there is evidence of inhibition towards bacteria growth. The green synthesis method was compared with the chemical reduction method using Tollen's reagent about inhibition towards bacteria growth. The best activity was observed for suspension reduced with Tollen's reagent.

**Keywords:** Synthesis of silver nanoparticles, XRD, SEM, electrolytic conductivity and antibacterial.