**Abstract**

In the present study, biochemical analysis of *Acalyphaindica,*biosynthesis of silver nanoparticles and its antimicrobial activity on clinical laboratory bacterial pathogens were investigated. Silver nanoparticles were rapidly synthesized using root extract of Acalyphaindica and the formation of nanoparticles was observed. The results recorded from UV-vis spectrum, and scanning electron microscopy (SEM) support the biosynthesis and characterization of silver nanoparticles. Further, the antibacterial activity of synthesized silver nanoparticles showed effective inhibitory activity against clinical laboratory pathogens Viz., *Escherichia coli* (gram negative) and *Staphylococcus aureus* (gram positive).