

## ABSTRACT

Common methods of synthesizing metallic nanoparticles are chemical and physical. However, they are expensive and use toxic chemicals. Green synthesis is less costly and safer hence a potential alternative. Silver nanoparticles (Ag NPs) were synthesized using dichloromethane extract of *Chrysanthemum cinerariaefolium* and colour change from pale green to dark brown was observed. Scanning Electron Microscopy (SEM) images were faceted and others formed clusters. Transmission Electron Microscopy (TEM) images were spherical with an average size of  $22.8 \pm 17.5$  nm. EDX analysis showed the nanoparticles had percentage abundance of 67.26%. Fourier-transform Infrared Spectroscopy (FTIR) analysis showed absorption bands at 3489.59  $\text{cm}^{-1}$ , 3217.80  $\text{cm}^{-1}$ , 2384.74  $\text{cm}^{-1}$ , 1633.05  $\text{cm}^{-1}$ , 1405.08  $\text{cm}^{-1}$ , 1109.32  $\text{cm}^{-1}$  and 505.93  $\text{cm}^{-1}$ . The UV-Vis analysis showed Surface Plasmon Resonance (SPR) peak at 434 nm. The nanoparticles were more active on *P. aeruginosa* with an MIC of 15  $\mu\text{g/ml}$  while the cytotoxicity assay showed Ag NPs had an MIC of 33.33  $\mu\text{g/ml}$  hence were noncytotoxic against Vero cells.