

# Biologically synthesized copper oxide nanoparticles enhanced intracellular damage in ciprofloxacin resistant ESBL producing bacteria

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© 2018 Elsevier Ltd Copper oxide nanoparticles (CuO NPs) were synthesized biologically using leaf extract of *Camilla japonica*. The typical UV-visible spectral peak of CuO NPs was observed at a wavelength of 290 nm, which confirmed their successful synthesis. From scanning electron microscope (SEM) and transmission electron microscope (TEM) analyses, the synthesized CuO NPs were found to possess spherical shape. Energy dispersive X-ray analyzer (EDX) results revealed that the CuO NPs are almost pure with atomic percentages of 50.92 for Cu and 49.08 for O. Fourier transform infrared (FTIR) confirmed the presence of an absorption peak located at a wavenumber position of 480 cm<sup>-1</sup> typical for highly pure CuO NPs. TEM images displayed that the particles are relatively uniform in size 15-25 nm. The *P. aeruginosa* and *K. pneumonia* showed complete resistance against Hexa 077 antibiotic discs. The result of 22 ceftazidime and 27 cefotaxime confirmed that both the uropathogens were ESBL prod