**Fruit Mediated Synthesis of Gold and Silver Nanoparticles Using *Lycium chinense* and Their Antimicrobial Activity**

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The gold (LC-AuNPs) and silver (LC-AgNPs) nanoparticles were rapidly synthesized by fruit extract of *Lycium chinense* within 1.15 and 25 min respectively in an eco-friendly way. The synthesized nanoparticles confirmed by relevant surface plasmon resonance peaks for gold and silver nanoparticles at 536 and 480 nm, respectively. FE-TEM results revealed that LC-AuNPs were 20-50 nm and LC-AgNPs were 50-100 nm. The maximum distribution of gold, silver elements and the crystallographic nature of synthesized were confirmed using EDX, elemental mapping and XRD. LC-AgNPs showed inhibitory activity against pathogenic microorganisms such as *E. coli* and *S. aureus*, whereas LC-AuNPs did not show inhibitory activity. The LC-AgNPs nanoparticles exhibited significant cytotoxicity to human breast cancer MCF7 cell line and less cytotoxicity to non-diseased RAW264.7 (murine macrophage) cells whereas LC-AuNPs showed minimal toxicity to both cell lines. In-depth research on this rapid, facile and greenery nanoparticles may play a potential role in biomedical applications.

**Key words:** *L. chinense*, Gold nanoparticles, Silver nanoparticles, Antibacterial activity, Cytotoxicity, Breast cancer

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