

Gold Nanoparticles Synthesis Using Environmentally Friendly Approach for Inhibition Human Breast Cancer

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Abstract

In this study, gold nanoparticles were synthesized in a single step biosynthetic method using aqueous leaves extract of thymus vulgaris L. It acts as a reducing and capping agent. The characterizations of nanoparticles were carried out using UV-Visible spectra, X-ray diffraction (XRD) and FTIR. The surface plasmon resonance of the as-prepared gold nanoparticles (GNPs) showed the surface plasmon resonance centered at 550nm. The XRD pattern showed that the strong four intense peaks indicated the crystalline nature and the face centered cubic structure of the gold nanoparticles. The average crystallite size of the AuNPs was 14.93nm. Field emission scanning electron microscope (FESEM) was used to study the morphology of the AuNPs. AuNPs exhibited a spherical shape with diameters ranging 13–53nm. The synthesized stable gold nanoparticles showed more significant anticancer activity against MCF-7 and CAL-51 cells after 48h.

Keywords:

- [T vulgaris](#)
- [AuNPs](#)
- [cytotoxic activity](#)
- [surface plasmon resonance](#)
- [cancer therapy](#)