



Anticarcinogenic Potential Of Gold Nanoparticles Synthesized From *Trichosanthes Kirilowii* In Colon Cancer Cells

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ABSTRACT

Keywords:

Gold nanoparticles (AuNPs), anticancer theranostic nanoparticles, *trichosanthes kirilowii*,

Gold nanoparticles (AuNPs) are the most excellent anticancer theranostic nanoparticles were synthesized through efficient, simple and green synthesis method using *trichosanthes kirilowii* extracts and widely characterized by UV- spectroscopy, TEM and FT-IR techniques. The AuNPs, synthesized by the *trichosanthes kirilowii* extracts found that the nanoparticles were around 50 nm in size, which is the admirable nano dimension achieved by plant mediated synthesis. In stable with the results of microscopic observations of cell morphology, MTT assay revealed a potent, selective, dose- dependent anticancer activity of AuNPs on HCT-116 cells. The AuNPs significantly enhances ROS generation, causes mitochondrial membrane damage and induces morphological changes using AO/EtBr staining assay. Further AuNPs treatment induces G0/G1 phase cell cycle arrest in HCT-116 cells. AuNPs treatment activates caspase expression and downregulates the anti-apoptotic expression in A549 cells. Our results point out that the compounds of *trichosanthes kirilowii* as apposite reducing and stabilizing agents, not only affect the physicochemical properties of AuNPs but also lead to the green synthesis of an effective anticancer agent with high potential for cancer therapy.