Curcumin gum Arabic nanoparticles demonstrate potent antioxidant and cytotoxic properties in human cancer cells

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Abstract

The main purpose of the study was to enhance the stability and therapeutic effects of Curcumin (Cur) through nanoformulation with gum Arabic (GA) as a coating agent through an efficient synthetic approach. The antioxidant properties of the developed nanoparticles (Cur/GANPs) were assessed through several in vitro assays, such as beta-carotene bleaching activity, DPPH, and nitric oxide scavenging activities in addition to evaluating its inhibitory activity on angiotensinconverting enzyme (ACE). The cytotoxicity of Cur/GANPs was evaluated in vitro using different types of human cancer cells including breast cancer (MCF7, MDA-MB231), liver cancer (HepG2), and colon cancer (HT29) cells. The prepared particles displayed an elliptical shape with a size ranging between 20-260 nm and a potential difference of -15 mV. The Cur/GANPs exhibited significant antioxidant activity compared to free

Keywords

Author Keywords: Curcumin; Gum arabic; Nanoparticles; Cancer cells; Antioxidants

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