Effects of lipoic acid, caffeic acid and a synthesized lipoyl-caffeic conjugate on human hepatoma cell lines.

Guerriero E, Sorice A, Capone F, Costantini S, Palladino P, D'ischia M, Castello G.

Source

"Pascale Foundation" National Cancer Institute-Cancer Research Center, Mercogliano (AV), Italy.

Abstract

Hepatocellular carcinoma (HCC) is among the most aggressive and fatal cancers. Its treatment with conventional chemotherapeutic agents is inefficient, due to several side effects linked to impaired organ function typical of liver diseases. Consequently, there exists a decisive requirement to explore possible alternative chemopreventive and therapeutic strategies. The use of dietary antioxidants and micronutrients has been proposed for HCC successful management. The aim of this work was to test in vitro the effects of lipoic acid, caffeic acid and a new synthesized lipoyl-caffeic conjugate on human hepatoma cell lines in order to assess their effect on tumor cell growth. The results of cytotoxicity assays at different times showed that the cell viability was directly proportional to the molecule concentrations and incubation times. Moreover, to evaluate the pro- or anti-inflammatory effects of these molecules, the cytokine concentrations were evaluated in treated and untreated cellular supernatants. The obtained cytokine pattern showed that, at the increasing of three molecules concentrations, three pro-inflammatory cytokines such as IL-1β, IL-8 and TNF-α decreased whereas the anti-inflammatory cytokine such as IL-10 increased.

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