عنوان مقاله:

In vitro cytotoxicity evaluation of free curcumin and curcumin-loaded chitosan capped mesoporous silica nanocarriers against MCF-7 breast cancer cells

محل انتشار:

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خلاصه مقاله:

Breast cancer is the most common cancer among women worldwide and second most common cancer overall. Natural products and extracts have shown great potential as anticancer agents for the treatment of tumors. Curcumin is a polyphenol derived from the rhizome of the Curcuma longa plant which has anticancer properties, but it has poor bioavailability and it is a major obstacle to use of it for treatment. So, in this study mesoporous silica capped by chitosan natural polymer have been employed to improve the bioavailability of curcumin. The efficiency of pure curcumin and curcumin loaded nanocarriers against MCF-7 breast cancer cells was investigated. In vitro cytotoxicity evaluation of free curcumin and curcumin loaded Nanocarriers were determined by using the MTT colorimetric assay. Our study confirmed that curcumin-loaded chitosan capped mesoporous silica nanocarriers has more cytotoxicity than free curcumin against the MCF-7 breast cancer cells. According to this study, it is proposed to practical use of curcumin loaded chitosan capped mesoporous silica nanocarriers for developing novel drug delivery system against human breast cancer.

کلمات کلیدی:

curcumin, cytotoxicity, mesoporous silica nanocarriers, breast cancer