

عنوان مقاله:

Antiproliferative effects of zno nps synthesis using seed of amaranthus cruentus extract on ht-29 human colon cancerous cells

محل انتشار:

سومین سمپوزیوم بین المللی سرطان نسترن (سال: 1396)

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خلاصه مقاله:

Using plants and their extracts can create a biological pathway for the synthesis of materials with nano dimensions. Nanoparticles due to their size and other characteristics have enormous applications invarious fields, including the medicine. Today, the cytotoxic effects of many nanoparticles have been reported in suppressing cancer cells. Zinc Oxide nanoparticles (ZnO-NPs), an important semiconductor nanoparticle with wide band gap energy has been attention for its wide range of application such as electronics, optics, optoelectronics and biomedical. The purpose of this study was to examine the cytotoxic effects of ZnO-NPs biosynthesized with *Amaranthus cruentus* seed water extract (ZnO-NPs/AL) on HepG2 liver cancer cells. DMEM Media, chemicals compound such as MTT, DMSO, PBS, FBS, trypsin-EDTA, penicillin/streptomycin. MTT assay was done in order to evaluate the toxicity of nanoparticles. In this method, the cells were first grown in a 96-well plate and then treated with different doses of the nanoparticles, and finally, after the addition of MTT, and DMSO, the absorption was measured at 570 nm. The results showed that the nanoparticle suppresses the cancerous cells with IC50 about 50, 50 and 40 $\mu\text{g/ml}$ 24, 48 and 72 h after treatment. As can be seen, the cell survival rate is inversely proportional to the increase in nanoparticle concentrations. Survival rates were reduced from about 7% to below 10%at 25-200 $\mu\text{g/ml}$, which indicates that nanoparticles are capable of inhibiting colon cancer cells. The effect of toxicity on cancer cells is one of the features that can demonstrate the potential of a compound in the face of cancer to prevent the development and treatment of cancer. The results show that nanoparticles can be used as an auxiliary agent for cancer treatment

کلمات کلیدی:

Colon Cancer, Cancer Prevention, Cell and Cancer, Cancer Treatment and Management, Drugs and Cancer

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