

عنوان مقاله:

Investigation of silver nanoparticles synthesized from pollen of colza on viability of mcf7 cells

محل انتشار:

سومین سمپوزیوم بین المللی سرطان نسترن (سال: 1396)

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خلاصه مقاله:

Today, cancer is one of the most common and most dangerous diseases. Each year, cancer affects more than 12 million people in the world and causes more than 7 million deaths a year Which is equivalent to more than 13% of deaths. Cancer is a genetic disorder that caused by lack of control of cell proliferation. Breast cancer is one of the major and malignant cancers in among women in advanced countries. There are several ways to treat and prevent the progression of breast cancer but today, attention is greatest to methods that have the least side effects on other cells in the body. One of these methods is the use of nanotechnology and nanoparticles. One of the latest methods of cancer repression is the use of nanoparticle and nanotechnology. Therefore, in this study, the effect of silver nanoparticle synthesized from colza pollen on MCF7 cells was evaluated. MTT test is a colorimetric method that is based on the resuscitation of tetrazolium salt by the succinate dehydrogenase of living cells and the formation of formazan crystals. In this method, the amount of toxicity of the silver nanoparticle is determined on the cancerous cells and hence, the effective concentration of the nanoparticle can be determined. To perform this test, first the cells must be in the logarithmic growth phase. then The cells were seeded and treated with different concentrations of nanoparticles for 24, 48 and 72h. After incubation, the viability of the cells was determined by adding the MTT solution. After 4 h, DMSO was added and the absorbance was recorded at 570 nm. The results showed that the two factors of concentration and time of treatment are effective in cell viability. So that, The survival rate of the cells is higher at the initial time and concentrations of treatment but with increasing the time and concentration of treatment, the survival rate is reduced. In this study, The effective concentration (IC₅₀) of nano-particles on breast cancer cells was determined about 2 µg/ml. Comparison of treatment time and concentrations of nanoparticles indicate that the effect of the nanoparticle is concentration-dependent and the time of treatment does not have a significant effect on cytotoxicity. Morphological observation shows the change in cell shape and size of cells. The results showed that the nanoparticle is capable of inhibiting cancerous cells with high potency. Therefore, may be used of this nanoparticle to suppress the cancer cells

کلمات کلیدی:

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

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