

عنوان مقاله:

The preparation of nano- and non-nano systems, based on Teucrium polium extract and the evaluation of their toxicity on breast cancer cell line

محل انتشار:

دوازدهمین کنگره بین المللی سرطان پستان (سال: 1394)

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خلاصه مقاله:

Introduction: Breast cancer is one of the well-known prevalent types of cancer as the main reason for mortality in females throughout the world. Due to side-effects of chemical drugs, researchers looked for new therapies using herbal products. The desert germander (*Teucrium polium*) includes some compounds which have been studied as efficient factor in cell anti-proliferation and apoptotic activities in cancerous cells. The goal of this study is to prepare nano-systems and alternative systems resulting from extract of *Teucrium polium* plant and to examine their toxicity on breast cancer cell lines. Method: Primarily, Methanol extract of desert germander was prepared. Then plant's extract was converted into liposomal nanoparticles with different formulations including nano-liposome and nano-liposome with folic acid cell surface-receptors as well as nano-liposome with B12 vitamin cell- surface receptor. After culture of breast cancer cell lines (MCF-7), these cells were treated under effect of produced formulations from extract of plant under concentrations levels 0.01, 0.1, and 1 μ g/l for 1, 4, 12, and 24h respectively. Afterwards, cellular toxicity effect was assessed by MTT assay. Findings: The results indicated that effect of plant's extract on breast cancer cells was lesser under alternative system rather than in nano-system forms. Similarly, effect of nano-liposomal form with B12 vitamin cell surface receptor was greater on breast cancerous cells than by nano-formulations and all of nano formulations and alternative formulations had no significant effect on normal breast cells (P-value < 0.05). Conclusion: Behavior of used medicinal plant totally relies on structural formulations, concentrations, and different times. In fact, adding liposomal nanoparticles to extract of this plant may be considered as an appropriate candidate for design of anti-cancer drugs with high efficiency

کلمات کلیدی:

MCF-7 breast cancer cell line, Encapsulation, Desert germander (*Teucrium polium*), Liposome, MTT assay

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