

Abstract:

Breast Cancer is the most common malignancy after lung cancer, and is the second common cause of death related to cancer. Therapeutic methods in new medicine have serious side effects and can lead to cancer return and Drug resistance. Therefore it's very important to bring up new therapeutic approaches. In this regard, using natural phytochemicals which demonstrated significant activities against different human cancers in clinical trials is a developing strategy for the prevention and treatment of cancer. Cytotoxic effects of ethanolic extract of *Teucrium polium* and *Heracleum persicum* on MCF-7 cell line of breast cancer and changes in genes expression of K-Ras and Bcl-2 in the laboratory conditions are evaluated in this research. After culture cells line of MCF-7, cells were treated by different concentrations of extract for 48 hours, then the effect on cellular life was investigated by (3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium Bromide) MMT test. Results demonstrated that *T. polium* has significant cytotoxic effects in compare with *H. persicum*, and in the concentrations of 2.5, 5 and 10 µg/mL after 48 hours, it results in a decrease in the viability of the cells and apoptosis induction in cancer cells. The results of Real-Time PCR test showed that treating cells caused a decrease in mRNA expression level of K-Ras and Bcl-2. Therefore it can be said that the extract of *T. polium* by creating apoptosis in cancer cells and reducing expression level of oncogenes can be of significant important for improving therapeutic strategy.

Key words: breast cancer, apoptosis, *Teucrium polium*, *K-Ras*, *Bcl-2*



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**Evaluation of the effect extract of Germander and
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Ras and Bcl-2 genes in a MCF-7 breast cancer cell line**

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