



Abstract

Investigation of Cytotoxic Effect of *Origanum minutiflorum* on Cancer Cells [†]

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Abstract: The number of breast cancer cases have increased gradually in women. During treatment of the breast cancer, chemotherapy needs adjuvant agents. Medicinal plants have an anticancerogenic effect in such cases. Our aim is to search the cytotoxic effect of *Origanum minutiflorum* O. Schwarz & P.H. Davis on breast cancer cells in vitro conditions. For this purpose MDA-MB-231 and MCF-7 breast cancer cell lines and adipose tissue derived mesenchymal stem cells were used. Oregano oil from *Origanum minutiflorum* was exposed to the all cells and IC₅₀ dose was calculated by MTT assay. The immunocytochemical staining of eNOS, p53, PCNA and TUNEL at IC₅₀ dose for each cells. The results were evaluated using one-way-ANOVA by Graphpad software. The proliferation of breast cancer cells were inhibited by oregano oil. Oregano oil did not show any cytotoxic effect in mesenchymal stem cells. It was determined that cytotoxic effect of oregano oil on cancer cells was occurred through increase of eNOS and p53 staining for survival and the TUNEL labeling for apoptosis, and decreased of PCNA staining for proliferation. According to our data, oregano oil has cytotoxic effect on breast cancer cell lines, and it needs to be analysis to detect active components for other biological activities.

Keywords: breast cancer; MCF-7; MDA-MB-231; *Origanum minutiflorum*; cytotoxicity; oxidative stress; apoptosis

Conflicts of Interest: The authors declare no conflict of interest.



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