

Abstract

The Neurotoxic Effects of *Origanum minutiflorum* †

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Abstract: The natural products are promising products for anti-proliferative effects in cancer. In this study our aim was to analyze the neurotoxic effect of *Origanum minutiflorum* O. Schwarz & PH. Davis on neuroblastoma cells in *in vitro* conditions. The neuroblastoma cells were treated with Oregano oil from *Origanum minutiflorum* and doxorubicin, and cytotoxic activities of these agents were evaluated by MTT assay for IC50 doses. The immunocytochemistry staining of eNOS, iNOS and TUNEL assay were performed. The results were analyzed using Graphpad software for one-way-ANOVA. The immunoreactivities of eNOS and iNOS were increased in neuroblastoma cells treated with oregano oil and doxorubicin. Both of Oregano oil and doxorubicin showed inhibitory activity against neuroblastoma cells via oxidative stress. Also the number of apoptotic cells was greater than the control group. The oregano oil enhanced the cytotoxic activity of doxorubicin. The compound of oregano oil should be considered with the other neuroblastoma cells for neurotoxicity.

Keywords: neuroblastoma; *Origanum minutiflorum*; neurotoxicity; oxidative stress; apoptosis



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