

Abstract

Antiproliferative and Apoptotic Effects of the Medicinal Plants on Breast Cancer Cell Lines [†]

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Abstract: *Inula viscosa*, *Rubus caesius* and *Viscum album* known as medicinal plants which have therapeutic properties in treatment of various diseases and particularly cancer. In this study, we aimed to show their anti-proliferative and apoptotic effects on MCF-7, MDA-MB-231, 67NR and 4T1 breast cancer cell lines. The cell lines were cultured to determine the cell growth using the MTT assay. Cells were cultured to evaluate for eNOS, VEGF and apoptosis by immunocytochemical staining and TUNEL assay. Statistical analysis was performed with the H-score. *Inula viscosa*, *Rubus caesius* and *Viscum album* extracts were found to significantly inhibit the growth of breast cancer cell lines in dose and time-dependent manner. eNOS staining was significantly increased and VEGF was decreased after extract application at IC₅₀ dose. Similarly, results indicated that the treated breast cancer cell lines exhibited a marked increase in apoptosis. We showed that the toxic effect of *Inula viscosa*, *Rubus caesius* and *Viscum album* extracts created by oxidative stress and apoptotic mechanisms. Our findings suggested that due to their anticancer potential, these plants may be used as an alternative treatment for the management of cancer. Therefore future studies will focus on the identification of the molecules responsible for the anticancer activity.

Keywords: Antiproliferative; oxidative stress; apoptosis



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