

عنوان مقاله:

Cytotoxic and Apoptotic Effects of Scrophularia Umbrosa Dumort Extract on MCF-7 Breast Cancer and 3T3 Cells

محل انتشار:

مجله گزارش های بیوشیمی و زیست شناسی مولکولی، دوره 8، شماره 1 (سال: 1398)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

Background: Breast cancer is the most prevalent cancer in women worldwide, especially in developing countries. Scrophularia umbrosa Dumort, a medicinal plant, has been used to treat various diseases in traditional medicine. In this study, we investigated the anti-cancer and cytotoxic effects of S. umbrosa Dumort extracts on a human breast cancer cell line. Methods: The methanol and other S. umbrosa Dumort factions, including those from dichloromethane, water, n-butanol, ethyl acetate, and petroleum ether, were examined. The cytotoxic effects of the fractions on MCF-7 human breast cancer adenocarcinoma and 3T3 mouse embryonic fibroblast cells were evaluated by MTT assays. In addition, apoptotic induction was determined by propidium iodide flow cytometry. Results: The water, n-butanol. petroleum ether, and ethyl acetate fractions had no cytotoxic effects. The methanol and dichloromethane fractions showed significant cytotoxic affects in a dose-dependent manner on the malignant cells while causing no damage to non-malignant cells. In addition, the cell death assay indicated that the S. umbrosa dichloromethane fraction triggered apoptosis in the MCF-7 cells. Conclusions: S. umbrosa induced apoptosis in MCF-7 cells. The S. umbrosa dichloromethane fraction exhibited the greatest cytotoxic effect on these cells. This work presents a first evaluation of the cytotoxic effects of S. umbrosa and further studies are needed to determine the cytotoxic mechanism.

کلمات کلیدی:

Apoptosis, Breast cancer, Cytotoxicity, MCF-7 cell line, Dumort

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