

عنوان مقاله:

Idarubicin-bromelain combination sensitizes cancer cells to conventional chemotherapy

محل انتشار:

مجله علوم پایه پزشکی ایران، دوره 22، شماره 10 (سال: 1398)

تعداد صفحات اصل مقاله: 7

نویسندگان:

Abdullah Taşkın - *Nutrition and Dietetics Department, Faculty of Health Science, Harran University, Şanlıurfa, Turkey*

Mehmet Tarakçıoğlu - *Department of Biochemistry, Medical Faculty, Gaziantep University, Gaziantep, Turkey*

Hasan Ulusal - *Department of Biochemistry, Medical Faculty, Gaziantep University, Gaziantep, Turkey*

Mustafa Örkmez - *Department of Biochemistry, Medical Faculty, Gaziantep University, Gaziantep, Turkey*

خلاصه مقاله:

Objective(s): The primary cytotoxic effects of anticancer drugs like idarubicin, a chemotherapeutic agent, are not limited to neoplastic cells; they also produce similar effects in normal cells. In this study, we hypothesized that the combination of idarubicin-bromelain could make cancer cells more susceptible to cytotoxicity and genotoxicity. **Materials and Methods:** To test our hypothesis, the optimal concentrations of idarubicin and bromelain were combined and incubated in the HL-60 cancer cell line and normal human mononuclear leukocytes (PBMC) for 24, 48, and 72 hr. Cytotoxicity and genotoxicity were evaluated by measurement of ATP cell viability test, DNA damage, Caspase-3, Acridine orange/ethidium bromide (AO/EB), and DAPI fluorescent dyes in both cell types. **Results:** The combination of idarubicin-bromelain significantly reduced cell proliferation in the more potent HL-60 compared to PBMC in all incubation times ($P<0.05$). DNA damage and Caspase-3 levels (except for 24 hr) were also higher in the HL-60 cell line in comparison with PBMC and were statistically significant ($P<0.05$). The percentages of apoptotic images obtained by DAPI and AO / EB morphological examination were increased in both cells, depending on the combination dose. **Conclusion:** Based on these results, it can be concluded that idarubicin combined with bromelain produces more cytotoxic effects in low concentrations in comparison with when it was used per se in the HL-60 cells. Conversely, it was found that this combination in PBMC caused less cytotoxicity and less genotoxicity. Taken together, it can be said that this new combination makes cancer cells more sensitive to conventional therapy.

کلمات کلیدی:

Apoptosis, Bromelain, Cell Survival, DNA damage, Drug Interactions, Idarubicin

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/942476>



