

عنوان مقاله:

Comparison of the effects of natural polyphenol Caffeic acid phenethyl ester on estrogen positive(ER+) and negative (ER-) breast cancer cells

محل انتشار:

یازدهمین کنگره بین المللی سرطان پستان (سال: 1394)

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خلاصه مقاله:

Introduction: Breast cancer is one of the most important causes of death. This is a heterogeneous cancer, a spectrum of many subtypes with differences in response to clinical management. The estrogen receptor is critical for most human breast cancers. Radiotherapy, as an effective and important treatment modality, has a number of limitations in its application towards cancer treatment. Natural compound could affect the sensitivity of cancer cells to radiation therapy. We compared radiosensitizing effect of Caffeic acid phenethyl ester (compound of honeybee propolis) on T47D and MDAMB- 231 as an estrogen positive (ER+) and negative (ER-) breast cancer cells, respectively. Methods: Clonogenic assay was performed to assess sensitivity of cells to radiation and combination of radiation and CAPE. Comet assay was carried out to measure level of DNA damage up to 120 minutes after irradiation. Results: Pre-treatment of cells with 1 μ M CAPE resulted in radiosensitivity in both cell lines. CAPE is able to reduced cell survival of T47D and MDA-MB-231 in lower and higher doses of radiation, respectively. Also, comet assay showed that CAPE cause delay in repair of radiation-induced damage after irradiation. Discussion and conclusion: The T47D cells are more susceptible than MDA-MB-231 cells in combinational radiation with CAPE treatment. Based on the results presented here, because of similar structure of CAPE and estrogen, it can bind to estrogen receptors. So, CAPE is more effective adiosensitizer on ER-positive than ER-negative cells, which exert its effects by maintain of radiation-induced DNA damages.

کلمات کلیدی:

Breast cancer, Caffeic acid phenethyl ester (CAPE), Estrogen receptor, Radiosensitizer

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