

عنوان مقاله:

Study of anticancer activity of cecropin B on γ , 12-dimethylbenz (a) anthracene-induced breast cancer

محل انتشار:

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خلاصه مقاله:

Background and aims: Antimicrobial peptides constitute a family of bioactive peptides that are involved in the body defense. Recently, their anti-cancer properties, especially by inducing apoptosis, have been proven in in vitro studies. Therefore, in this study, the effects of cecropin B as an antimicrobial peptide on breast cancer growth, hematological parameters, and histopathological changes in rats were evaluated. Methods: Twenty-four female rats were randomly divided into 4 groups. The cancer group, control group, cecropin B group, and cancer group treated with cecropin B. The tumor size was measured at the beginning and the completion of the treatment period. Blood samples were collected for assessment of the hematological parameters and Bax and Bcl2 levels. Tumor tissues were removed for histopathological analysis. Results: The tumor size had a significant increase in the cancer group and cancer group treated with cecropin at the end of the treatment. A significant decrease in mean cell volume, white blood cell count and Bcl2 level and a significant increase in hemoglobin and Bax levels were observed in the cancer group treated with cecropin B compared to cancer group. Changes in other parameters were not significant. Histopathological study showed the invasion of mitotic cells to stromal and muscular tissues of the breast in the cancer group, while focal destruction of tissue and cell death were observed in the cancer group treated with cecropin B. Conclusion: The results showed that cecropin B has been able to reduce tumor growth and have little side effects on hematologic factors probably through apoptosis.

کلمات کلیدی:

Cecropin B, Apoptosis, Breast cancer, Hematological parameters

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