

عنوان مقاله:

Protective effect of methanolic extracts of *Thymus vulgaris* L. against cyclophosphamide-induced DNA damage in mouse bone marrow cells using the micronucleus test

محل انتشار:

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خلاصه مقاله:

Cyclophosphamide is a chemo-therapeutic agent used in the treatment of various cancers and autoimmune diseases. This composition has cytotoxic and clastogenic properties. The purpose of this study was to evaluate the protective effect of methanol extracts of *Thymus vulgaris* L. against DNA damage induced by cyclophosphamide in mouse bone marrow cells by the micronucleus test. The extract concentrations of 375, 750, 1500 mg/kg were injected intraperitoneally (ip) into mice for 7 consecutive days. One hour after the last injection, cyclophosphamide 50 mg/kg ip was injected. 24 hours after cyclophosphamide injection, the animals were killed and the samples of bone marrow were prepared and stained using the standard methods. For each sample, 1000 cells of polychromatic erythrocytes (PCE) and the same number of normochromatic erythrocyte (NCE) and the cells containing their micronucleus were counted. Cyclophosphamide increased the frequency of micronuclei polychromatic erythrocytes (MnPCE) and decreased cell proliferation (PCE/PCE+NCE). All doses of extracts significantly reduced the micronucleus frequency ratio ($P < 0.05$). The cells proliferation ratio (PCE/PCE+NCE) was also increased. The best effect in reducing the micronucleus frequency was at 1500 mg/kg dosage. Thymus extract is able to reduce the clastogenic and cytotoxic effects of cyclophosphamide, due to its antioxidant properties, playing a protective role.

کلمات کلیدی:

Chemotherapy, Cyclophosphamide, DNA destruction, Micronucleus test, Thyme extract

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