Chenopodium ambrosioides e sua família: Efeitos genotóxicos

Common Names: Erva-de-Santa Maria, Epazote, Wormseed, Apasote, Chenopode, Feuilles A Vers, Herbe A Vers, Meksika Cayi, Paico, Pazote, Semen Contra, Semin Contra, Simon Contegras

Ascaridole leaves—185-18000 ppm or 0,0185% - 1,8%

Argentine folk medicine: genotoxic effects of Chenopodiaceae family.

Chenopodium ambrosioides L. and Chenopodium multifidum L. (Chenopodiaceae), common name: Paico, are medicinal plants. They are aromatic shrubs growing in South America. For centuries, they have been used due to its medicinal properties. However, there are few reports in literature about the genotoxic effects of these plants. Therefore, the aim of these work is the evaluation of genetic damage induced by decoction and infusion of this plants which were assayed in different concentrations (1, 10, 100, 1,000 microL extract/mL culture), by addition of the extract to human lymphocyte cell cultures, negative controls were included. The endpoints evaluated were chromosomal aberrations (CA), sister chromatid exchanges (SCE), cell proliferation kinetics (CPK) and mitotic index (MI). The repeated measure analysis of variance was used for statistic evaluation of the results. The results showed: (a) statistical increase in the percentage of cells with CA and in the frequency of SCE when cultures were exposed to both aromatic plants, (b) a decrease in MI of both Paicos assayed, although no modification in the CPK values was observed, (c) no effect was noticed in the analysis of Chenopodium album L., which was used as negative control of the essential oil. These results suggest a cyto and genotoxic effect of Chenopodium ambrosioides and Chenopodium multifidum aqueous extracts related to the essential oil of the plant (as Chenopodium album did not perform).

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Chenopodium ambrosioides (Chenopodiaceae) is an anthelmintic herb used in Latin-America's folk medicine. The aim of this work is to evaluate genetic damage induced by decoction and infusion of this plant which were assayed in different concentrations (1, 10, 100, 1000 microg/ml), by addition of the extract to human lymphocyte cell cultures. The endpoints evaluated were chromosomal aberrations (CA), sister chromatid exchanges (SCE), cell proliferation kinetics (CPK) and mitotic indexes (MI). The repeated measure analysis of variance was used for statistic evaluation of the results. The results showed (a) a statistical increase in the percentage of cells with CA and in the frequency of SCE when cultures were exposed to both preparations of Paico, (b) a decrease in MI of both preparations assayed, although no modification in the CPK values either in the infusion or in the decoction was observed. These results suggest a possible genotoxic effect of both preparations, probably due to different active principles.

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Cytogenetic effects of aqueous extracts of the medicinal plant paico (chenopodium multifidum L.).


Abstract

The cytogenetic effects of aqueous extracts of Chenopodium multifidum L. (Paico) were determined by addition of the extracts and fractions to human lymphocyte cultures. Toxicity was evaluated by analysis of chromosomal aberrations (CA), sister chromatid exchange (SCE), mitotic (MI) and replication (RI) indexes. The results showed an increase in CA frequency in cultures exposed to infusion decoction, no modification in the CPK values either in the decoction or in the infusion, and a decrease in the MI of lymphocyte cultures exposed to the decoction. These results suggested genotoxic effects of "Paico" aqueous extracts.

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