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APPLICATION OF THE COMET ASSAY IN THE EVALUATION OF THE SEMI-SYNTHETIC *N*-BUTYL DILLAPIOLE ETHER IN BALB/C MICE

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Abstract:

Introduction: the semi-synthetic n-butyl ether dillapiole (EBD) has a potential effect on the control of *Aedes aegypti*, the vector of the dengue, Zika, chikungunya, and yellow fever virus. However, there are no studies on the risk of exposure to this compound to the health of humans and other animals. In this sense, the Comet Assay Test is used to detect genomic lesions that can result in mutations. Objective: evaluate the incidence of DNA damage in blood cells of isogenic mice treated with EBD. Methodology: fifth male Balb/C mice were used, five individuals per group. Multiple treatments were used for three consecutive days, introducing 0.1mL for every 10 grams of body weight, through gavage. The negative control group received filtered water (NC). In the solvent control group (CS) 5% dimethyl sulfoxide was administered. EBD concentrations of 40, 20, and 10 mg/kg were used. In the positive control group, methyl methanesulfonate (40 mg/kg) (PC) was performed. Blood was collected at 4 and 24 hours after treatment using cardiac puncture. In the Comet Assay test, the analysis of 150 cells per animal occurred using the Tail Length parameter, the Comet Score 2.0 software, using the Kruskal Wallis test and the Fisher test, with a significance threshold of $p<0.05$. The analysis was performed using the Tail Length parameter, the Comet Score 2.0 software, the Kruskal Wallis test, and the Fisher test, with a significance threshold of $p<0.05$, using the R software program, version 4.1.0. Results: both at 4 hours and 24 hours, all treatment groups showed a significant difference when compared to CP. Further, only the highest concentration (50 mg/kg), in the time of 24 hours, showed a significant difference when compared to CN and CS. Final considerations: these results indicate that the two lower concentrations of EBD (10 and 20 mg/kg) presented a negative result to the induction of DNA strand breaks, in the studied tissue, even using multiple treatments.

Palavras-chave: Vector control; Genomic lesions; Rodent; ;

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