IN VIVO TESTING FOR GENOTOXICITY AND MUTAGENICITY OF GUAPEVA FROM BRAZILIAN CERRADO

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Identification of antimutagenic and anticarcinogens agents in food is essential for the development of strategies to prevent cancer through changes in eating habits. The micronucleus (MN) test is used to identify genotoxic compounds that are capable of causing chromosomes breaks, while the comet assay measures DNA fragmentation. The hydroalcoholic extracts of seed, pulp and peel of Pouteria cf. guardneriana Radlk (Guapeva) were investigated regarding their genotoxicity and cytotoxicity possible properties. The extracts of peel, pulp and seed of Guapeva were used at concentrations of 200 and 400 mg extract per kg body weight (b.w.) in Swiss mice for 15 days (MN test) and for 7 days (Comet assay). Treatment with the peel and the seed of Guapeva at 400 and 200 mg extract/kg b.w., respectively were the most effective against DNA fragmentation. They presented a decrease in the damaged cells percentage of 78.8% and 79% with DNA damage of 179.60% and 153.40% in comparison with positive control that presented 97.40% of damage cells and 275.80 of DNA damage. The most effective treatment against genotoxic compounds was the seed of Guapeva at 200 mg extract/kg b.w., with 83.72% of protection. All extracts presented antigenotoxic and antimutagenic effects against H₂O₂ (Comet assay) and CPA (MN test). The treatments could prevent DNA damage even with a genotoxic and cytotoxic inducer agent. The exact effects of these extracts, as well as other beneficial roles that they could have on cell metabolism, need to be further investigated in the future.