

ASSESSMENT OF THE CYTOTOXIC EFFECTS OF THE BIOGENIC AMINES ASSOCIATIONS CADAVERIN AND PUTRESCINE IN HUMAN AND AMPHIBIAN CELL CULTURES

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The cemeteries are anthropic sources of environmental contamination, which main cause is the presence of toxic substances in a highly toxic liquid, called cemetery leachate. Among the toxic substances of cemetery leachate there are the biogenic amines cadaverine (CAD) and putrescine (PUT). Thus, this study aimed to evaluate the cytotoxic, genotoxic and mutagenic potential of the combination of both amines on cultures of human liver cells (C3A cell line) and amphibian fibroblasts (Speedy). The cytotoxicity of the CAD + PUT mixtures was evaluated by the resazurin test. C3A cells were exposed to concentrations of 10 to 70% PUT + 10 to 40% CAD. For the Speedy cell line, the exposure occurred at concentrations of 0.01 to 10% PUT + 5 to 20% CAD. The combinations that exhibited cell viability above 80% for the C3A cell line were: 20% CAD + 10% PUT (T1); 20% CAD + 30% PUT (T2); and 30% CAD + 10% PUT (T3). For Speedy cells, the non-cytotoxic associations were: 0.1% PUT + 10% DAC (T1S); 0.1% PUT + 5% DAC (T2S); and 0.01% PUT + 5% CAD (T3S). The micronucleus (MN) assay was performed with both cell lines. In this test, the proliferation index with cytokinesis blockage (PICB) indicated the absence of cytotoxicity. Regarding the C3A cell line, genotoxicity was observed for the T2 and T3 treatments and mutagenic potential for the T1, T2, and T3 samples, while for the Speedy cell line, the genotoxicity was observed for the T2S and T3S treatments. For this cell line was also observed mutagenic potential for T2S sample. All the results were submitted to D'Agostino & Person normality test and ANOVA, which *p <0.05. The results of this study demonstrate genotoxicity, as well as a mutagenic potential for most of the combinations of CAD and PUT studied.

Key-words: C3A lineage; cemetery leachate; Speedy cell line; mutagenicity.