ANTITUMORAL ACTIVITY OF 2-ACETYLPYRIDINE-DERIVED THIOSEMICARBAZONES

Silva, P.R.O.[1], Soares, M.A[1], Mendes I M C[2], Beraldo H[2], Santos R.G.[1]

[1]Lab. Radiobiologia, Centro De Desenvolvimento da Tecnologia Nuclear, CDTN/CNEN, Minas Gerais. [2]Departamento de Química, Universidade Federal de Minas Gerais

A successful anticancer drug should kill or incapacitate cancer cells. There is a continued need for new prototypes – new templates to use in the design of potential chemotherapeutic agents to improve prognosis and health quality for malignant tumor patients. Thiosemicarbazones have drawn great pharmaceutical interest for their potent biological activities, such as tumor and microbial cytotoxicity. The aim of this work was to identify and characterize the antitumoral effect of 2-acetylpyridine-derived thiosemicarbazones on malignant tumors. Cytotoxic and antiproliferative activities were evaluated on malignant glioblastoma and melanoma cells. All thiosemicarbazones proved to have high cytotoxic effect against melanoma and glioblastomas at very low concentrations. Morphological alterations such as rounded cell shape, chromatin condensation and cell shrinkage paved the apoptotic mechanism for these compounds. Inhibition of proliferation was also observed. All compounds were more potent than the clinically used drug cisplatin.

KEY WORDS: thiosemicarbazones, antitumoral activity, apoptoses.

FINANCIAL SUPPORT: CDTN/CNEN, CAPES, CNPq