Cytotoxicity of Riparins in Human Breast Carcinoma Compared to Leukemic Cells

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Introduction: The cancer is currently the leading cause of death worldwide and with it, the search for new anticancer agents has become an important approach, a great emphasis is given primarily to the agents of natural origin. Plants play a surprisingly important source of new treatments for cancer, despite advances in chemical synthesis. In green fruits of Aniba riparia, there was the isolation of riparin I (methyl ether of tyramine N-benzoyl), riparin II (N-methyl ether 2-c) and riparin III (N-2 methyl ether, 6-dihydroxy benzoyl-tyramine). Objectives: Thus the aim of this study was to evaluate three phytomedicine belonging to the class of riparins (I, II and III) in human breast carcinoma (MCF-7) in comparison to leukemic cells (U937 and K562). Material and Methods: the cell viability was evaluated by MTT reduction and trypan blue exclusion assays in tumor cells treated with riparins. Results and Discussion: In the U937 cell IC⁵₀ values found were 60, 25 and 15 µM (riparin I, II and III, respectively). In K562 cells the treatment with riparins resulted in IC⁵₀ values of 125, 27 and 15 µM (riparin I, II and III, respectively. In contrast riparins were not effective in trigger cytotoxic effects in MCF-7 cells evaluated by MTT reduction viability assay until 50 µM. Conclusion: These results indicated anti-proliferative activity of riparins in leukemic cells studied and tumor-selective manner, as reflected by the comparatively different IC⁵₀ values in the cell models used (leukemic cells and breast cells).

Key Words: riparins, leukemic cell, MCF-7, MTT reduction