Bioprospecting of Anticancer Natural Products in Extracts Collection of Trees of the Atlantic Forest.

Almeida, A.A.[1]; Simão, M.V.R.C.[2]; Siqueira, R.P.[1]; Moreira, G.A.[1]; Rodrigues, L.A.; Bressan, G.C.[1]; Leite, J.P.V[1].

[1]Department of Biochemistry and Molecular Biology, Universidade Federal de Viçosa, MG, Brazil. [2]Department of Tropical Forest Science, Instituto Nacional de Pesquisas da Amazônia, AM, Brazil.

INTRODUCTION: Cancer is the second disease to higher mortality worldwide. The discovery of new anticancer drugs of natural origin, such as alkaloids from *Vinca rosea*, has encouraged the evaluation of antiproliferative activity of plant extracts. **OBJECTIVES:** Evaluate the anticancer activity *in vitro* of the collection BIOPROS *Extracts Library* derived from native trees of the Atlantic Forest in 3 cancer cell lines, MCF-7, B16-F10 and HepG2 by the MTT reduction assay. **MATERIAL AND METHODS:** Extracts were made from the leaves and twigs by maceration using organic solvents and water. All extracts were tested at concentration 100 µg/mL in 96-well microplates. The extracts that inhibited cell growth above 75% (GI_{75}) were tested again at concentrations (3.125 - 200 µg/mL) to calculate the IC_{50}. The selectivity was evaluated in VERO cells. We adopted the NCI-Frederick parameter to rank the cytotoxic activity of the extracts in inactive, weak, moderate and strong. **RESULTS AND DISCUSSION:** 196 extracts of 49 species were screened. Of these, 7 extracts reached the GI_{75}. The Organic Extracts of the Leaves of the species *Casearia sylvestris* Sw., *Acnistus arborescens* (L.) Schltdl. and *Aureliana velutina* Sendtn had moderate antiproliferative activity. *Casearia sylvestris* and *Aureliana velutina* were active against B16-F10 with IC_{50} values equal to 3.81 µg/mL and 6.22 µg/mL, respectively. *Acnistus arborescens* showed cytotoxic activity against HepG2 with IC_{50} = 5.01 µg/mL. *Casearia sylvestris* and *Aureliana velutina* showed selectivity index (SI) for the B16-F10 above 12. These extracts shown to be safe because they were only cytotoxic to normal cells VERO in high concentrations, suggesting selectivity. *C. sylvestris* and *A. arborescens* are known by the scientific community for synthesizing molecules with antitumor activity. However, it is the first time that reports cytotoxic activity for *Aureliana velutina*. **CONCLUSION:** This research confirms the importance of biodiversity of the Atlantic Forest, which plant species are still few studied about the anti-tumor potential.

Keywords: Anticancer Activity, BIOPROS *Extracts Library*, Plant Extracts, Atlantic Forest.

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