

Bauhinia Extracts Evaluation of Tumor Development and Metastasis *in Vitro*

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ABSTRACT

Introduction: The majority (90%) of deaths in cancer patients is related to metastasis. Studies have revealed that the metastatic process is linked to the performance of matrix metalloproteinases (MMPs), because of their cleaving capacity nearly every components of the extracellular matrix. *Bauhinia variegata candida* presented activities proven antibacterial, antiulcer, against growth of liver tumors. **Objectives:** Evaluate the cytotoxic effect of fraction 15IIID31 against the tumor (Hela, HN13) and non-tumor cell lines, its effects on adhesion, invasion and migration of 4T1 cells, as well as its action on MMP activity *in vitro* and in the supernatant of tumor cells and identify compounds with such activities. **Material and Methods:** 15IIID31 were produced by fractionation on chromatographic column. The proteolytic activity of MMPs was measured by zymography (0.09 g/mL). The cell viability was determined by MTT assay at 0.025, 0.050, 0.075 and 0.1 mg/ml of 15IIID31 for 72h. Migration tests were performed by Wound Healing and Boyden Chamber assay (40µg/mL, 72h/24h). The invasion test was conducted by Matrigel assay (40µg/mL, 24h) and evaluated adhesion to Laminin, Fibronectin, Collagen I and IV. For characterization was performed by HPLC and NMR analysis. **Results and Discussion:** The fraction 15IIID31 inhibited 100% MMPs activity *in vitro*. This fraction was cytotoxic front tumor cell lines Hela and HN13 and, in the same concentration (0,05µg/ml), was non-cytotoxic front splenocytes cells. The 15IIID31 also decreases the invasion and migration of 4T1 cells and increased the adhesion when compared with the control. The supernatant of cultures treated with 15IIID31 showed no active MMPs while the control showed. The characterization suggests the presence of phenolic acids sugars, sapoin and steroid. **Conclusions;** Front of results presented supposes that the fraction 15IIID31 of contains components with potential selective tumor cytotoxic action, and action also on the migration of tumor cells, probably by inhibition of MMPs.

Keywords: Cancer, Metastasis, Medicinal Plants.