ACTIVITIES OF *Bauhinia* EXTRACTS ON MIGRATION 4T1 CELLS IN VITRO AND MMP-2 AND MMP-9 EXPRESSION

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**Introduction:** The invasion and metastasis of tumor cells have been associated with poor prognosis of cancer. Metastasis requires the degradation of extracellular matrix components, which facilitates the migration of malignant cells. Matrix metalloproteinases (MMPs) are a family of proteinases associated with extracellular matrix degradation. These include MMP-2 and MMP-9 able to degrade collagen. Studies have linked some compounds of the *Bauhinia* genus to the antitumor and anti-metastasis activities. **Objectives:** Evaluate the activity of three semi-purified fractions of *Bauhinia* (14IIIA40, 14IIID16 and 15IIID31) in murine breast cancer cell (4T1) migration and in its expression of metalloproteinases. **Methods:** Cell migration was determined in a scratch wound-healing motility assay. Approximately 3.75x10⁵ 4T1 cell were cultured in 24 well plates and allowed to grow to confluence. The following day, two wounds were introduced in the middle of the well. Next, the medium was exchanged adding the fractions 14IIIA40, 15IIID31 and 14IIID16 in the concentrations of 0.05mg/ml, 0.03mg/ml and 0.02mg/ml respectively. The concentration used refers to IC50 on tumor cells evaluated in previous study. After 72h treatment, the media were collected and lyophilized and the proteolytic activity of MMP-2 and MMP-9 was measured by gelatin zymogram. All of the cells were maintained at 37°C and 5% CO₂. Phytochemical screening of *Bauhinia* extracts was carried. **Results:** The 14IIIA40, 14IIID16 and 15IIID31 inhibited 100% wound growth compared with the control. The zymogram revealed the absence of active MMP-2 and MMP-9 in supernatants treated with the extracts. Phenolic acids and flavonoids were detected in these fractions. **Conclusion:** It is suggested that the ratio between inhibition of migration caused by 14IIIA40, 14IIID16 and 15IIID31 with absence of MMP-2 and MMP-9 active in the supernatant and these proteolytic enzymes are inhibited by phenolic acids and flavonoids contained in the extracts.

**Keywords:** Metastasis, cancer, phytochemical.

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