

***In vitro* cytotoxic activity of planifolin isolated from *Paepalanthus planifolius* (Eriocaulaceae) on murine mammary and lung adenocarcinoma cell lines**

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Eriocaulaceae is commonly found in Bahia and in Minas Gerais states, Brazil, and is the source of several compounds with biological activity. Studies have demonstrated that almost all species of *Paepalanthus* (Eriocaulaceae) possess naphthopyranone derivative. A naphthopyranone dimer, named planifolin, was isolated from a methylene chloride extract of the capitula of *P. planifolius* Koern. This molecule may present several biological activities that can be related to its polyphenolic structure. Planifolin was studied by using two murine mammary adenocarcinoma cell lines, and a lung adenocarcinoma one, called LM2, LM3 and LP07, respectively. 10⁴ cells/well were cultured in a 96-well plate with different concentrations of the fraction, added pre- and post-adhesion of the well surface. The cells were incubated for 72 hs and observed at least two times a day using an inverted microscope. After this period, the cells were fixed with formaldehyde-PBS and May-Grunwald Giemsa method. Pictures were taken with a camera connected to the inverted microscope for morphological analysis. After the morphological analysis of cells, it was observed that planifolin was cytotoxic (until 28.28 and 14

□g/ml) and cytostatic (until 7 □g/ml) to LM2, LM3 and LP07 cells. LM2 and LM3, but not LP07, were more sensitive when they did not adhere to plastic surface. LP07 (lung cells) were 2 times more sensitive to cytotoxicity than mammary cells. Our studies indicate that planifolin is cytotoxic and cytostatic to mammary and lung cancer cell lines *in vitro*, although further research is required to clarify the mechanisms of action of the compound and to explore its potential application to cancer prevention and control.