In vitro cytotoxic activity of *Alchornea triplinervia* ethyl acetate fraction on murine mammary and lung adenocarcinoma cell lines

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The use of natural resources as treatment for diseases is as old as the human species. However, most plants were not investigated chemically or biologically. The immune system is a remarkably adaptive defense system that has evolved in vertebrates to protect them from invading pathogenic microorganisms and cancer. Breast and lung cancer are the principal cause of death in women worldwide. Compounds obtained from plants can be toxic to tumor cells and useful in cancer treatment. *A. triplinervia* is a tree found in some Brazilian states and is known as tapiá. Ethyl acetate fraction obtained from *A. triplinervia* (ATF) was studied using two murine tumor cell lines, a mammary and a lung adenocarcinoma one, called LM2 and LP07, respectively. Approximately 10^4 cells were seeded per well in a 96-well plate and different concentrations of the fraction were added: 125.0, 62.5, 31.2, 15.6 and 7.8µg/mL. The cells were incubated for 72 hours and observed at least two times a day using an inverted microscope. After this period, the cells

were fixed with formaldehyde-PBS and stained by May-Grunwald Giemsa technique. Pictures were taken with a camera connected to an inverted microscope and the morphological aspects of the cells were analyzed. After the morphological analysis of the cells, it was observed that ATF was cytotoxic for LM2 and LP07 cells, greatly inhibiting the cell growth of both lines. The inhibition occurred in a dose-dependent manner. The highest concentration of ATF (250µg/mL) killed, approximately, 100% of LP07 and 90% of LM2 cells, but LM2 were more sensitive to ATF in the lower concentrations (31.2, 15.6 and 7.8µg/mL). Our studies indicated that ATF is cytotoxic to mammary and lung cancer cell lines *in vitro*, although further research is required to clarify the cytotoxic mechanisms of the fraction and to explore its potential application for cancer prevention and control.