



Evaluation of the cytotoxic activity in human cells strain after treatment with herbal products derived from *Baccharis trimera* (Less.) DC.

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Abstract: Cancer is a disease which affects people all around the world. Despite the advances in drug development, there is still a lack of antineoplastic agents¹. *Baccharis trimera* (Less.) DC, popularly known as “carqueja”, is a medicinal herb widely used in Brazil for the treatment of many diseases². Its essential oil (EO) was fractionated for subsequent cytotoxic evaluation. We evaluated the cytotoxic activity of the essential oil and its major compounds (commercially acquired), as well as the cytotoxic activity of the purified compound eupatorin (flavone) obtained from ethyl acetate extract from the leaves of *B. trimera*, in tumor cells (HepG2 – hepatocellular carcinoma; MCF7 – human breast adenocarcinoma) and normal cell (MCF10 – human breast cancer). Methods: EO obtaining – by hydrodistillation. EO fractionation – EO was fractionated by column chromatography with silica gel and hexane: ethyl acetate gradient (80:20, 85:15, 88:12, 90:10, 95:5); the fractions are being analyzed by GC-MS. Eupatorin: ethyl acetate extract was submitted to column chromatography with silica gel, using a gradient of hexane: ethyl acetate: isopropanol and methanol. Chromatographic and spectrometric techniques (TLC, HPLC, GC-EM and NMR) were used to analyze EO and extract fractions. For the cytotoxicity tests we applied the Sulphorhodamine B assay. Results and Conclusions – we obtained fractions with different composition in EO column chromatography. Eupatorin was identified in a purified fraction by TLC, HPLC, UV and NMR analysis. All samples (EO and compounds) evaluated showed cytotoxic activity with statistical significance.

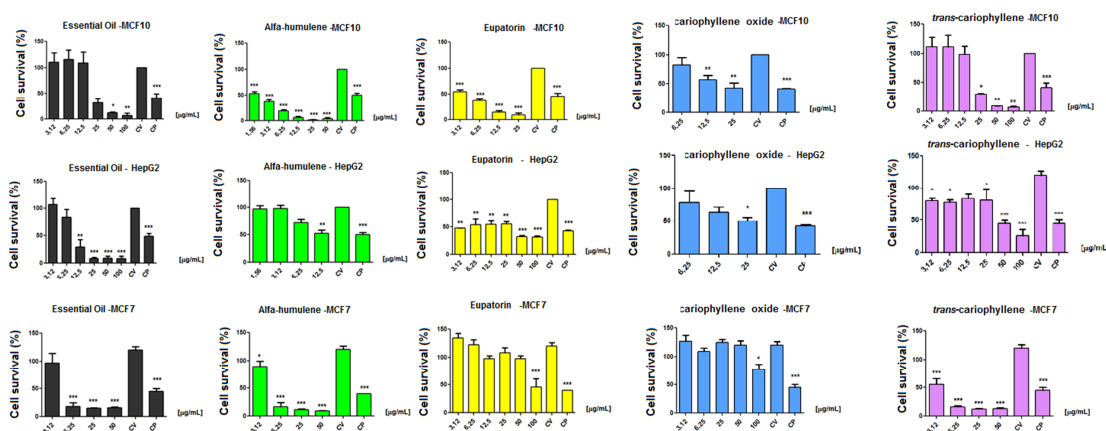


Figure 1: Cytotoxic activity of EO and compounds from *B. trimera*.

We observed that eupatorin and EO and its major compounds presented cytotoxic activity in different intensities in the lines tested. Eupatorin had strong activity against HepG2. α -humulene and *trans*-cariophyllene were more cytotoxic in MCF7. All tested samples were cytotoxic against MCF10. References: [1] MANS, D. R. A.; ROCHA, A. B.; S, G. Anti-cancer drug discovery and development in Brazil: targeted plant collection as a rational strategy to acquire candidate anti-cancer compounds. **The Oncologist**, v.5, p. 185-198. [2] NEWMAN, M. B.; CRAGG, G. M. Natural products as sources of new drugs over the last 25 years. **J. of Natural Products**, v.70, n.3, p. 461-477. [3] CLAUDINO, C. C. Tese de Mestrado em Ciências Farmacêuticas – UNESP, Araraquara, 2013.

