



# 10º Encontro Nacional de Cromatografia

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COM O ALTO PATROCÍNIO DE SUA EXCELÊNCIA



*O Presidente da República*

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10th Chromatography Meeting

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10º Encontro de Cromatografia

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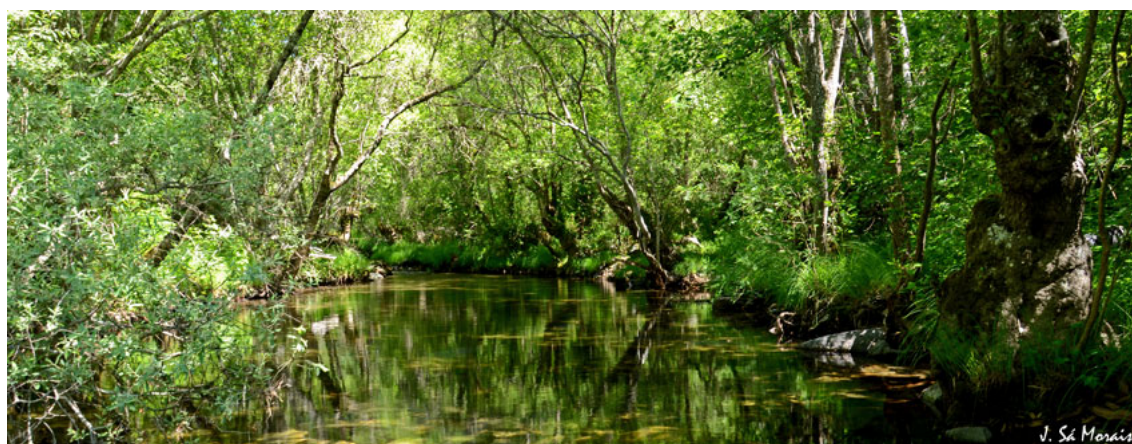
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## PC-129

# Valorising leaves of *Garciniabrasiliensi* Mart as sources of bioactive compounds

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Discovery of new drugs from natural products is becoming widespread and an example of a promising plant is the *bacupari-anão* or *bacupari mirim* that belongs to the species: *Garcinia brasiliensi* Mart, family *Myrtaceae*. This tree is native to the forests of the Amazonian and also to the Atlantic Forest. Since ancient time, the leaves of this tree have been reported to have numerous functionalities, correlated with the presence of bioactive compounds [1]. Thus, this study aimed to evaluate the bioactive properties of *G. brasiliensi* leaves regarding to its possible antioxidant activity and cytotoxic properties in human tumor cells. Three different extracts of the leaves were tested: hexane, dichloromethane and ethyl acetate. Furthermore, the most active extract was characterized in terms of its phenolic compounds content. Chemical profile of the extracts was obtained using an HPLC system coupled to a diode array detector (DAD) and mass spectrometry (MS) with an electrospray ionization interface (ESI). The antioxidant activity was evaluated by four in vitro assays: DPPH (2,2-diphenyl-1-picrylhydrazyl) radical scavenging activity, reducing power, inhibition of  $\beta$ -carotene bleaching and inhibition of lipid peroxidation by the thiobarbituric acid reactive substances (TBARS) assay. The cytotoxicity was tested in MCF-7 (breast adenocarcinoma), NCI-H460 (non-small cell lung carcinoma), HeLa (cervical carcinoma) and HepG2 (hepatocellular carcinoma) cell lines and in a non-tumor primary culture (porcine liver primary culture PLP2). Among all the tested samples, ethyl acetate extract presented the highest DPPH scavenging activity ( $EC_{50}$  value =  $31,2 \pm 0,2 \mu\text{g/mL}$ ), reducing power ( $68,8 \pm 0,2 \mu\text{g/mL}$ ),  $\beta$ -carotene bleaching inhibition capacity ( $15,9 \pm 0,3 \mu\text{g/mL}$ ) and TBARS ( $4,6 \pm 0,2 \mu\text{g/mL}$ ). It was also able to inhibit all the tested human tumor cells and none of the samples revealed toxicity for the non-tumor cell line PLP2 ( $GI_{50} < 400 \mu\text{g/mL}$ ). The ethyl acetate extract was the most active extract and analysis of HPLC-DAD-MS data revealed a total of twelve phenolic compounds, comprising five bioflavonoids, four flavones, two flavonols and a flavan-3-ol. The most abundant phenolic compound was the bioflavonoid morelloflavone-7-*O*-glucoside. This study highlights the importance of the recovery and valorisation of *G. brasiliensi* leaves, in order to obtain valuable products, which can be explored in the development of functional foods.

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