



## IN VITRO CYTOTOXICITY EVALUATION OF HYDROETHANOLIC EXTRACTS FROM EUGENIA SP. LEAVES

FIGUEIREDO, Sônia Aparecida<sup>1</sup>;  
BASTOS, Renan Gomes<sup>2</sup>;  
RAMOS, Thalita da Silva<sup>3</sup>;  
SILVA, Marcelo Aparecido<sup>4</sup>;  
PAULA, Fernanda Borges de Araújo<sup>5</sup>.

### ABSTRACT

Medicinal plants have been used to treat several diseases. These natural products are a promising source of new antitumor agents, especially saponins, as they have considerable therapeutic efficiency and less side effects when compared to synthetic molecules. According to popular usage, the leaves of the species of *Eugenia* sp. have antioxidant, hypoglycemic, hypotensive and antipyretic activities. These therapeutic actions are due to the presence of phenolic acids, flavonoids, tannins and saponins in their composition. Saponins are secondary metabolites of a glycosidic nature with cytotoxic activity. Therefore, the aim of this work was to evaluate the cytotoxic activities of the hydroethanolic extracts of *Eugenia florida* DC (EF) and *Eugenia sonderiana* O. Berg (ES) leaves in cultures of melanoma cells of strain B16F10 (mouse) and A-375 (human). The leaves of the plant species were collected in the state of Minas Gerais, Brazil, under the geographical coordinates W044°06'34.2", S20°57'00.1". After adequate drying and grinding, the leaves were submitted to the extraction process by simple percolation, using 70% ethanol, followed by rotaevaporation and lyophilization. B16F10 and A-375 cells were cultured in RPMI-1640 medium and supplemented with 10% fetal bovine serum, 10 mM hepes and 1% antibiotic-antimycotic solution. All were kept in an incubator at 37°C and with 5% CO<sub>2</sub>. The cytotoxicity of cells culture after exposure to the extracts at different concentrations (46.82 to 3000 mg/mL) was determined using 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay. The highest concentrations of ES and EF (from 750 to 3000 mg/mL) were significantly and statistically more cytotoxic than the others, but there was no statistical difference between them when in contact with the A-375 strain. ES was more cytotoxic to B16F10 cells than EF, with toxicity starting at a concentration of 187.5 mg/mL, reducing the number of viable cells by up to 87.68%. The cytotoxicity demonstrated by the ES extract may be due to the higher content of saponins present in its composition. These results call attention and further studies should be carried out in order to identify the possible chemical structures of the saponins present in ES, evaluate the potential anticancer activity and establish the structure-activity relationships.

**Keyword:** Medicinal plants. Saponins. Melanoma cells. Cytotoxic activities. *Eugenia sonderiana* O. Berg.

<sup>1</sup>Federal University of Alfenas, E-mail: soniaafigueiredo@hotmail.com;

<sup>2</sup>Federal University of Alfenas, E-mail: renangnosia2019@gmail.com;

<sup>3</sup>Federal University of Alfenas, E-mail: rhalitatsr.ramos@gmail.com;

<sup>4</sup>Federal University of Alfenas, E-mail: marcamosilva@gmail.com;

<sup>5</sup>Federal University of Alfenas, E-mail: fernanda.paula@unifal-mg.edu.br.