Área: QPN

Cytototic Activity and Chemical Profile of Methanolic Extract Obtained from Avelós Stem (*Euphorbia tirucalli* L.) Euphorbiaceae

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Highlights

The phytochemical study conducted with methanolic extract of *Euphorbia tirucalli* from the crude methanolic extract allowed the identification of phenolic compounds, flavonoids, and terpenes. Assays of cytotoxic potential showed that the methanolic extract of *E. tirucalli* has activity against the cell lines of breast adenocarcinoma (MCF-7) and human melanoma (SK-MEL-37).

Abstract

Avelós (*Euphorbia tirucalli* Linnaeus), a plant selected for this study, has been popularly used in the fight against tumors, arousing the interest of researchers in this area so that it can be used safely in the auxiliary treatment of different types of cancer.[1] It belongs to the family Euphorbiaceae and to the genus *Euphorbia*, it is also the object of studies related to the treatment of a range of infectious and inflammatory diseases. Herbaceous much used by popular and traditional medicine, presents, a latex rich in molecules that confirm its high toxicity. The objective of this research was to verify the chemical profile of the methanolic extract obtained from the stem (modified leaves) of the plant in question and to determine the cytotoxicity of the crude extract by cytotoxic assay against the lineages of adenocarcinoma (MCF-7) and neoplastic cells of human melanoma (SK-MEL-37).[2] For this, the plant was collected, and after drying and milling the material was extracted with methanol. Subsequently, the present compounds were separated by the thin-layer chromatography technique and the classes of substances found in the extract were identified by the technique of Nuclear Magnetic Resonance of Hydrogen and Carbon-13 (NMR).[3] The combination of cyclohexane with Acetone and Hexane (5:3:2) provided a suitable polarity for the elution of the extract, which was revealed with ultraviolet detection and different reagents: sulfuric acid solutions; aluminum chloride; ferric chloride; 10% potassium hydroxide in ethanol; green bromocresol indicator solution; potassium permanganate, Dragendorff Reagent, vanillin and iodine vapors. The phytochemical study of the methanolic extract of *Euphorbia tirucalli* allowed to identify the presence of phenolic compounds, flavonoids and terpenes, a result confirmed by NMR spectra. The cytotoxic potential assays, although they are in low concentration thus altering the result, show that the methanolic extract of *Euphorbia tirucalli* shows activity against the tested cell lines. The observed activity may be related, according to information available in the literature, with the classes identified in the samples studied.

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