



***Tagetes osteni* Hicken: chemical analysis and potential antineoplastic activity of the essential oil from leaves and flowers**

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Asteraceae family has several plants producing essential oils with commercial importance, being *Tagetes* one of the occurrences of genus in Brazil with distribution in almost all the territory and four species are described: *T. minuta*, *T. erecta*, *T. patula* and *T. osteni* (1). *Tagetes osteni* Hicken is native to southeast and south of the country and has not studies related to essential oil. Therefore, this work aims to investigate the chemical composition and biological activities, such as antioxidant and cytotoxic, of the essential oil of this species. For this purpose, leaves and flowers of *T. osteni* were collected in April 2015 in Santo Antônio da Patrulha, Rio Grande do Sul, Brazil. A voucher specimen was deposited in the herbarium of UFRGS (registry: ICN 181985). Fresh leaves and flowers were submitted to hydrodistillation separately in Clevenger-type apparatus for 3 hours. The oils were analyzed by GC-MS equipped with DB-5 fused silica capillary column (30 m X 0.25 mm X 0.25 µm) and the oil components were identified by comparison of its index retention and their mass spectra, with data taken from the literature and database NIST 62. Regular monitoring of the chemical composition was carried out by CG considering the analysis of the oil after extraction, after 24 hours and after one week. Human cervical cancer cells (SiHa) were seeded in culture plates in (DMEM)/10% FBS and non-neoplastic cells (human lymphocytes) were obtained from peripheric blood using Histopaque® and culture medium RPMI. The cells were maintained at 5% of CO₂ and 37 °C and treated with the flower and leaves oils in concentrations from 0.5 to 20 µg/mL for 24 and 48 hours using propylene glycol as a carrier. MTT assay was performed (0.5 mg/mL) with treated cells oil, control medium (DMEM) or vehicle control in both lines, SiHa and Hacat. Oil yields were 1.8% and 1.0% for flowers and leaves, respectively. The leaves oil presented as characterized by dihydrotagetone (64.2%) and (*Z*)-tagetone (15.9%), while for the flowers (*Z*)-β-ocimene (26.1%), (*Z*)-ocimenone (17.6%) and (*E*)-ocimenone (40.0%) were the major components. In relation to antineoplastic effect, the treatment with different concentrations of flower oil significantly inhibited the viability of cervical cancer cells in different times (95%). Meanwhile, oil concentrations between 10 and 20 µg/mL did not induce significant effects on the viability of non-tumor cells Hacat. These results emphasize the relevance of studies involving this native plant as a new potential therapeutic alternative for human cervical cancer.

1. Lista de Espécies da Flora do Brasil. Jardim Botânico do Rio de Janeiro. Available in: <<http://floradobrasil.jbrj.gov.br/>>. Accessed in: 14 Ago. 2015.

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