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In vitro evaluation of cytotoxicity and leishmanicidal activity of terpens isolated from the leaves of *malachra alceifolia*

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Products derivate from medicinal plants play an important role as antitumor, cytotoxicity, antimicrobial, anti-inflammatory, anti-estrogen, anti-allergic, antioxidant, among other. Colombia has about 10% of all plant species in the world, in the Colombian North Coast, communities from endemic areas depend of the popular and traditional treatments to heal some symptoms of this disease. This study aims to evaluate in vitro cytotoxic activity on human promonocytic cell line U937 and leishmanicidal activity against intracellular amastigotes of *Leishmania* (V) *panamensis* (MHOM/CO/87/UA140-EpiR-GFP strain) of terpens rich fractions obtained from leaves *Malachra alceifolia*. The plant was collected in 2017 at the north of Bolivar (Colombia). The cytotoxic activity was performed using MTT and antileishmanial assessment by flow cytometric technique. The assays were done by triplicate in at least two independent experiments, as positive controls were used Doxorubicin (Toxicity) and Amphotericin B (Activity). Results were expressed as fifty cytotoxic concentrations (CC50), concentration necessary to kill 50% of cells, and fifty effective concentrations (EC50) calculated by Probit analysis; it was similarly determined the Selectivity Index (SI). The terpens rich fractions **MA-I-15a** (CC50 47,17±15,57 µg/mL); **MA-I-15b** (CC50 6,08±0,23 µg/mL); **MA-I-15c** (CC50 6,32±0,46 µg/mL) and MA-I-15d (CC50 5,31±0,03 µg/mL against cell line U937 were considered as potentially cytotoxic. All fractions were high for antileishmanial activity against *Leishmania* (V) *panamensis* (MHOM/CO/87/UA140-EpiR-GFP strain) at 14.65 0.74 µg mL–1 IS = 3.22 (**MA-I-15a**), 2.50 0.27 µg mL–1 IS =2.43 (**MA-I-15b**), 5.78 0.46 µg mL–1 IS =1.09 (**MA-I-15c**) and 4.15 0.27 µg mL–1 IS =1.28 (MA-I-15d). These results contribute to search new therapeutic agents to treat *Leishmaniasis*. This Research was supported by a grants from the University of Cartagena and Colciencias-Colombia, Project No. 512-2012; the National Program for Doctoral Formation Colciencias, 727- 2015 and Doctoral program in biomedical sciences from University of Cartagena.

Biography

Harold Gómez-Estrada PhD in Medicinal Chemistry from the University Central of Venezuela, associated professor in Organic and Pharmaceutical Chemistry and director of Chemistry Research Group of Medicines of the University of Cartagena-Colombia. This training initiated over 20 years of experience with various aspects of developing "Biological evaluation of Colombian plant species"

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