

Cytotoxic activity of dichloromethane extract of *Annona salzmannii* seeds

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Abstract. The *Annona salzmannii* A. DC is a leafy tree, popularly known as “araticum-bravo”, “araticum-do-campo” and “araticum-da-mata” [1-2], found in the northeastern region of Brazil, and in southwest Bahia to São Paulo. Several parts of the plant are used in folk medicine, such as vermicide, dysentery, ulcers and inflammation [2]. Previous studies of the roots of this plant have identified several acetogenins, showing a broad spectrum in its biological activity [3-4]. The aim of this work is to investigate the biological activity and chemical composition of *A. salzmannii* seeds. Fruits were collected from Mata do Castro, Santa Luzia of Itanhy city, State of Sergipe, Brazil. The seeds were removed, washed with water to remove the pulp, dried and powdered. The seeds were macerated at 25 °C with dichloromethane solvent until exhaustion for given the crude extract. Thin-layer chromatography analyses of extract showed indicative of acetogenins. This sample (5.2 g) was subjected to exclusion column chromatography, affording to 15 fractions. Fraction 4 was submitted the analysis of ¹H NMR and ¹³C NMR showing signals characteristic of the presence of a mono-THF system in the aliphatic chain at δ 3.81 (2H) and δ 82.6 (2C). In addition was observed the signals in ¹³C NMR spectrum at δ 7.20 (1H), δ 5.07 (1H), δ 1.40 (1H) and δ 151.8 (1C), δ 78.0 (1C), δ 174.6 (1C), δ 69.4 (1C), δ 19.2 (1C), suggesting the presence of an α,β -unsaturated λ -lactone moiety, indicative of presence of a hydroxyl group at C-4. HR-MS analysis this fraction was realized, being observed the ions of m/z 595.45670 [M + H]⁺, 597.47594 [M + H]⁺, 605.47807 [M + H]⁺, 623.48804 [M + H]⁺ and 645.47000 [M + Na]⁺. These acetogenins isomers are being investigated. Cytotoxic activity of the extract was evaluated using two cancer cell lines (B16-F10 and HepG2), at a concentration of 25 mg mL⁻¹. Doxorubicin was used as a positive control. This extract displayed significant activities (98.0% and 97.5%, respectively) for these cell lines. Therefore, the IC₅₀ was available against four cancer cell lines exhibiting an IC₅₀ of 2.7 μ g mL⁻¹ for HL-60, 2.9 μ g mL⁻¹ for HepG2 and K562, and 3.9 μ g mL⁻¹ for B16-F10. This is the first time that is being related the cytotoxic activity of the *A. salzmannii* seeds. This promising activity can be related at mixture acetogenins isomers presents in fraction.

References:

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