



15-LIPOXYGENASE INHIBITORY ACTIVITY AND CITOTOXICITY EVALUATION OF *ANACARDIUM OCCIDENTALE*.

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Abstract: *Anacardium occidentale* L. (Anacardiaceae), is popularly known as "cashew". The fruits, stem bark, and leaves extracts have been traditionally used. Several pharmacological studies from different parts of *A. occidentale* validate its folkloric use in diverse alternative medicine practices [1]. Additionally, *A. occidentale* figures in the list of 71 plants of interest to the SUS (Sistema Único de Saúde, Health Unic System) [2]. The aims of this study were the evaluation of the 15-lipoxygenase (15-LOX) inhibitory and cytotoxic activities of the leaves ethanol extract from *A. occidentale*, and also the isolation of the bioactive metabolites. The air-dried, powdered aerial parts (50.0 g) were extracted with EtOH. After filtration, the solvents were removed under reduced pressure, to yield 17.6 g of the extract (ACF). Then, samples were submitted for biological assays. The cytotoxicity assays were performed using XTT assay in GM07492-A during 24h of treatment at concentrations of 6.25, 12.5, 25, 50, 100, 200, 400 and 800 µg/mL. The viability of the cultures was determined, establishing a relation between the absorbance obtained in the treated and untreated groups. The treatment of GM07492-A cell line with ACF demonstrated a statistically significant reduction in cell viability occurred in concentrations above 50 µg/mL, and IC₅₀ were 83.38±2.93 µg/mL. The 15-LOX inhibitory activity was evaluated using the lipoxygenase inhibitor screening assay kit (n° 760700, Cayman Chemical Company) according to manufacturer's instructions. The intensity of the absorbance was determined at 500 nm using a plate reader. Evaluation of the inhibitory activity of the extract on 15-LOX demonstrated that ACF was a promising inhibitor activity, with 72.0 ± 0.9 of inhibition at 25 µg/mL. The phytochemical study of the bioactivity extract lead to the isolation of flavonoids, quercetin (23.8 mg, Rt 19.61 min), and agathisflavone (28.2 mg, Rt 23.01 min). In conclusion, this study provided biological evidence that the ACF from *A. occidentale* presents *in vitro* 15-LOX inhibitory activity, without significant cytotoxicity. Finally, since the results are promising, further studies are in progress to disclose the compounds responsible for the activity.

References:

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