



## IN VIVO GASTROPROTECTIVE EFFECTS OF THE GALLOYLQUINIC ACID DERIVATIVES FROM THE LEAF EXTRACT OF *Copaifera* SPECIES ON EXPERIMENTAL GASTRIC ULCER MODEL

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**Introduction:** Peptic ulcers are characterized by imbalance between aggressive (acid, pepsin, *H. pylori* and non-steroidal anti-inflammatory agents) and protective (mucus bicarbonate, blood flow and prostaglandins) factors in the stomach tissue. In our laboratories, leaf extracts of *Copaifera* species have shown gastric protective activity [1]. **Purpose of study:** Aiming to identify the compounds responsible for this activity, we have studied the gastroprotective activity of 16 galloylquinic acids isolated from aqueous fraction of leaf *Copaifera* sp. **Methods:** The hydroalcoholic extract was partitioned with organic solvents and the remaining water fraction was lyophilized, and submitted to Sephadex LH-20 using a gradient of methanol:water (1:9 to 9:1). Each galloylquinic acid were isolated from the Sephadex fractions by reverse phase in HPLC, and were identified by NMR means [2]. Gastroprotective activity was evaluated using Ethanol/HCl induced ulcer model [3]. *Balb-C* male mice (n=6, 20±3 g) were orally treated with 30 mg/kg of each galloylquinic acids, gallic acid and quinic acid. Omeprazole (30 mg/kg) and vehicle solution (Cremophor 10%) were used as controls. One hour after the treatment, animals received Ethanol/HCl (60%/0.3N) to induce stomach lesions, and one hour later animals were euthanized and lesions images were analyzed by using the software *ImageJ*<sup>®</sup>. **Results and Conclusions:** Oral treatment with all galloylquinic acids (30 mg/kg) significantly decreased the number of ulcerative lesions induced by ethanol and ischemia/reperfusion injury. 4,5-di-*O*-galloylquinic acid, 5''-*O*-methyl-4,5-di-*O*-galloylquinic acid and 5',5''-di-*O*-methyl-4,5-di-*O*-galloylquinic acid were most active promoting cure rates of 81%, 85% and 71%, respectively, compared with the control. Omeprazole showed 77% cure rate. This activity seems structural correlation, considering substitutions on the carbon position 4 and 5 of gallic acid residue. Galloylquinic acids may be responsible for the gastroprotective activity exhibited by the leaf extracts of *C. oblongifolia* and *C. duckei*. However, further studies are needed to confirm the mechanisms involved in the gastroprotection.

**Key-words:** *Copaifera*. Gastroprotective. Galloylquinic acid.

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