

## Hydroalcoholic extract obtained from *Eugenia punicifolia* leaves and its effect in improving injury induced by gastric ischemia- reperfusion in male and female rats

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**Introduction:** *Eugenia punicifolia* (Kunth) DC. (Myrtaceae), popularly known as “murta”, is a shrub largely distributed in the Amazon region and Savanna biome. The leaves of this medicinal plant are popularly used as a natural therapeutic agent to treat inflammation, wounds and infections.

**Aim:** The aim of this study was to evaluate the gastric healing effect against ulcer induced by ischemia and reperfusion (I/R).

**Material & Methods:** The gastric ulcers were induced by I/R in male and female (intact and ovariectomized) Wistar rats, according to the method described by Ueda *et al.* Hydroalcoholic extract from *Eugenia punicifolia* leaves (HEEP - 125 mg/kg – lower effective dose of previous assays, dose-response curve), lansoprazole (30 mg/kg) or vehicle (saline – 0.9%; 10 mL/kg) were administered during 6 days to determine the healing effects of the subacute treatment. After treatments, the rats were killed and the stomach removed for analysis of lesions areas (mm<sup>2</sup>) and biochemical parameters such as: superoxide dismutase (SOD - antioxidant), myeloperoxidase (MPO - inflammation marker), malondialdehyde (MDA - lipid peroxidation marker), catalase (CAT - antioxidant) and reduced glutathione (GSH - antioxidant). The results are expressed as mean ± standard error of the mean and statistical significance was determined by ANOVA followed by Dunnett’s test ( $p < 0.05$ ). Animal Research Ethical Committee n. 675.

**Results & Discussion:** The results show that the treatment with lansoprazole and HEEP during 6 consecutive days significantly healed the gastric ulcers decreasing the lesion area (males [63.43% and 73.68%]; intact females [68.80% and 52.83%]; ovariectomized females [50.39% and 43.13%];

respectively) when compared with their control group treated with vehicle. There are no significant changes between healing area of ovariectomized females and males rats treated with HEEP for 6 days ( $p > 0.05$ ). But when compared intact females with males, our results showed that the latter presents decrease in the lesion area after the treatment with the HEEP ( $p < 0.01$ ). Our results indicate that HEEP administered for 6 days presents curative effects against the I/R induced lesions increasing GSH levels ( $p < 0.0001$ ) in intact females. The biochemical parameters evaluated in this study are not related to the healing of the gastric mucosa of males and ovariectomized females.

**Conclusion:** Treatment with HEEP administered during 6 consecutive days in male and female rats (intact and ovariectomized) after gastric injury induced by I/R, could heal the mucosa with a significant increase in GSH levels, acting as antioxidant.

### Speaker Biography

Périco L L possess a Bachelor’s degree in Pharmacy from the Faculdades Adamantinenses Integradas (2010), a Master’s degree in Biological Sciences (Pharmacology) from the Institute of Biosciences of Botucatu at the São Paulo State University (UNESP) (2014). She is currently a Doctoral student in Pharmacology and Biotechnology at Institute of Biosciences of Botucatu (UNESP), where she works on the following topics: Pharmacology of Natural Products, with an emphasis on medicinal plants with antiulcerogenic, anti-inflammatory, antinociceptive and anti-diarrheal activity. She participates in the thematic project: “Standardized herbal medicines for the treatment of chronic diseases”. During the Master’s degree, she worked with animal models for gastroprotection. She currently works with animal models for the evaluation of hormonal effects on gastric ulcer healing. Her current project is titled: The role of the hydroalcoholic extract from the leaves of *Eugenia punicifolia* in experimental peptic ulcer disease: characterization of anti-inflammatory, healing and antiapoptotic mechanisms of action.

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