Constituents and anti-inflammatory activity of hydroalcoholic extract from *Andira nitida* bark

A. V. D. FERREIRA¹; L. S. C. JUSTUS²; D. K. MONTEIRO²; B. A. D. FONSECA²; M. N. LEITE²; O. V. SOUSA²; F. D. ROCHA².

1-Mestrando PPGCF, UFJF, antonioviniciusdf@gmail.com
2- Faculdade de Farmácia, Universidade Federal de Juiz de Fora

**Keywords:** *Andira nitida*. Inflammation.

**Introduction:** The genus *Andira* (Fabaceae) is known popularly as "Angelín", represented by more than 30 species distributed in Tropical America, mostly originating in Brazil. Species of this genus are recognized to contain phenol derivatives, such as isoflavones and flavanols. In folk medicine, "Angelín" is used as a purgative, vermifuge, and febrifuge. The hydroalcoholic extract of *Andira nitida* bark (HAE) was characterized by TLC and RP-HPLC, confirming the presence of phenolic derivatives. The aims of the present study were to evaluate the content of phenolic derivatives and to investigate antioxidant and anti-inflammatory activities of HAE. **Methods:** Dried and powdered bark was extracted by percolation with EtOH:H₂O (8:2). Folin-Ciocalteau method was used to determine the content of phenolic derivatives, expressed as gallic acid equivalent (GAE). The anti-inflammatory activity was tested by paw edema model induced by intraplantar injection of carrageenan (0.2 mL of 1% solution in sterile saline) in Wistar rats (5 groups with 6 animals each). Doses of 50, 100 or 200 mg/kg or indomethacin 10 mg/kg were administered, v.o., 1 h before the injection of carrageenan. One-way ANOVA followed by Newman-Keuls test was used (p < 0.05). Antioxidant activity was assessed by DPPH method. **Results:** After 3 h of treatment, the doses of 100 (0.52 ± 0.07; 15.5%) and 200 mg/kg (0.47 ± 0.04; 22.5%) induced significant reduction of the paw edema. The doses of 100 and 200 mg/kg inhibited the edema at 18.84% (0.47 ± 0.04) and 28.12% (0.41 ± 0.03), respectively. Four hours after, as expected, indomethacin (positive control) reduced at 0.39 ± 0.06 (32%). Total phenolic derivatives ranged from 12.06 to 110.14 µg/mL of GAE, showing a strong correlation (Pearson, r=0.9774) with the capacity to scavenge the DPPH radical. EC₅₀ for HAE in the DPPH test was 7.61 ± 0.17 µG/mL. **Conclusion:** These results confirm the anti-inflammatory potential and antioxidant activity of HAE. **Financial support:** FAPERJ, CNPq, PPGCF/UFJF, CAPES, FAPEMIG.