EVALUATION OF ANTIOXIDANT AND ANTI-INFLAMMATORY ACTIVITY OF FRUITS OF *Solanum lycocarpum*

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The *Solanum* genus includes species that have relevance in food and nutrition, as well as biological activities, such as anti-inflammatory and antioxidant effects. The aim of this work was to quantify the total phenolic and flavonoid content and evaluate antioxidant and anti-inflammatory effects to the hydroethanol fraction (HE) obtained from the ripe fruits of *Solanum lycocarpum*. The material was collected and an exsiccate (BHCB 159397) was deposited in the Herbarium of the Biological Sciences Institute of UFMG, Belo Horizonte, Minas Gerais, Brazil. The ripe fruits were dried and extracted by percolation with ethanol P.A., obtaining the ethanol extract, which was partitioned with solvents of different polarities, obtaining the HE fraction. The total phenolic content was estimated using the Folin-Ciocalteu reagent and total flavonoid content was determined according to the aluminum chloride method. The antioxidant activity was determined by DDPH (1,1-diphenyl-2-picrylhydrazyl radical) method, with BHT (2,6-di-tert-butyl-4-methylphenol) as the reference compound. Anti-inflammatory activity was assessed using the carrageenan-induced paw edema method. Male Swiss mice (n=6) were divided into four groups and treated intraperitoneally: vehicle (DMSO 2% in sterile physiological saline, 0.01 mL/g), HE fraction (doses 30 and 100 mg/kg) or indomethacin (10 mg/kg). After 30 minutes, the animals received subplantar injection of carrageenan (400 μg/paw, 30 μL). Paw volume was measured by using a plethysmometer before treatment and 1, 2, 4 and 6 h after injection of the carrageenan. The difference between paw volume before and after inflammatory stimulus injection was taken as the volume of edema. The HE fraction presented total phenolic and flavonoid content of 14.02 and 3.59 μg equivalent to gallic acid/mg and quercetin/mg of the fraction, respectively. The HE fraction, at concentrations of 1 and 10 μg/mL, presented higher antioxidant activity than the BHT. The HE fraction at a dose of 100 mg/kg showed activity 4 and 6 hours after the inflammatory stimulus, inhibiting 85 and 83%, respectively, the paw edema (p < 0.001). Our results corroborate with results described in the literature, which showed antioxidant and antiedematogenic activities for the leaves of this species. The ripe fruits of *S. lycocarpum* have substances, such as flavonoids and phenols, that exhibit antioxidant and anti-inflammatory action, and the results obtained are promising scientific bases for future studies.

Keywords: *Solanum lycocarpum*, antioxidant, anti-inflammatory.

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