

Evaluation of acute toxicity, antioxidant activity, flavonoid quantification and total phenols from the hydroethanolic extract from leaves of *Leonotis nepetaefolia*.

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Introduction: The *Leonotis nepetaefolia* specie, popularly known as “cordão-de-frade”, belongs to the Lamiaceae family, used in popular medicine for several purposes, although with few scientific studies about its biological activity and chemical composition¹. The acute toxicity test aims to verify possible behavioral changes, heaviness and lethality with the exacerbated usage of the extract². Free radicals are produced by several factors by our organism and also provoke a series of bad alterations in its physiological and biochemical state. Under this aspect, it is proven necessary the research of substances with antioxidant activity, capable of neutralizing these radicals, thus, avoiding damaging the system. The DPPH is a radical used in rehearsals capable of evaluating the antioxidant’s capacity. Among the natural compounds capable to reduce the DPPH radical, the flavonoids and the phenols stand out, due to their chemical structure³. **Objectives:** To evaluate acute toxicity, antioxidant activity through the DPPH method, to quantify flavonoids and phenols in the hydroethanolic extract of the *Leonotis nepetaefolia* leaves. **Methodology:** Acute toxicity: It was administered a 5g/kg dose from the extract in 2 mouse groups (6 males and 6 females), the same procedure was done administering only saline to the animals who were observed during 10 days². DPPH test: There have been prepared solutions from the extract and from the quercetin patterns, gallic acid and ascorbic acid under concentrations from 5 to 160µg/mL in ethanol 70%, it was gotten from these solutions 1 mL and mixed to 2 mL of the solution of DPPH 0,5 mM in agitation, leaving it to rest for 30 minutes, verifying the absorbance on λ 517nm and calculating the percentage of antioxidant activity³. Quantifications of total phenols and flavonoids: These quantifications are performed by colorimetric tests Folin-Ciocalteu for phenols and aluminum chloride for flavonoids^{4,5}. **Results:** Acute toxicity: No deaths or behavioral changes were observed among the experimental group and the control group. No relevant macroscopic alterations in the vital animal organs were observed (heart, lungs, liver, spleen and kidneys), indicating absence of toxicity on the extract’s part. DPPH test: There have been analyzed the extracts and the patterns of ascorbic acid, gallic acid and quercetin in the concentrations of 5, 10, 20, 40, 80 and 160 µg/mL and the following results have been observed: Extract: 4,5%; 20,81%; 38,49%; 57,27%; 77,9%; 78,76%. Ascorbic acid: 78,29%; 79%; 79,72%; 80,96%; 82,03%; 83,63%. Galic acid: 82,08%; 82,71%; 84,42%; 85,51%; 86,45%; 87,38%. Quercetin: 79,79%; 83,07%; 86,01%; 87,04%; 88,43%; 88,95%. Quantifications of flavonoids and phenols : Flavonoids: 86,71 mg of EQ per g of extract; Phenols: 160,5 mg of EAG per g of extract. **Conclusions:** The extract demonstrated interesting antioxidant activity in the present test, not displaying toxicity, this activity suggests the presence of phenolic compounds, though it is necessary more studies for a more assertive investigation.

Keywords: DPPH, Phenols, Flavonoids, acute toxicity, antioxidant activity, *Leonotis nepetaefolia*.