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PHYTOCHEMICAL PROFILE AND ANTIOXIDANT ACTIVITY OF *Solanum cernuum* VELL

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The chemical and biological properties of *Solanum cernuum* Vell., popularly known as panacea, remain poorly documented. However, it has long been associated with anti-inflammatory and gastroprotective folk medicine, suggesting it may represent an underexplored reservoir of potential bioactive compounds. Further investigation on its antioxidant activity, as well as identifying its bioactive compounds, may broaden its potential therapeutic applications, as the oxidative stress is linked to the development of various chronic diseases. Accordingly, the present study aimed to evaluate the antioxidant potential of the ethanolic extract (EE) of *S. cernuum* leaves and obtain its phytochemical profile. *S. cernuum* leaves were collected at the UFJF Pharmacy School Garden (SisGen ADBB5C6), and a voucher was deposited in the CESJF herbarium (no. 80114). The EE was obtained by static maceration for 72 hours and stored at 4 °C. Antioxidant activity was assessed by hydroxyl radical (•OH) inhibition assay and by the ORAC method (Gligorovski et al., 2015; Pilaquinga et al., 2021) with modifications. Gallic acid and Trolox® were used as reference substances, respectively. Phytochemical characterization was performed by LC-MS using a C18 column (2.1 × 100 mm, 1.7 µm) at 40 °C, with a water/methanol gradient mobile phase at a flow rate of 0.4 mL/min; ionization occurred in negative mode (100–1000 m/z) with leucine-enkephalin as lock mass, and the spectra were compared with databases (MassBank, MoNA) and literature reports. The EE (12.5 µg/mL) showed significant antioxidant activity in the ORAC assay, and the analysis of fluorescence decay revealed no statistical differences among the time-points evaluated up to 60 min compared to Trolox® (12.5 µg/mL). The hydroxyl radical (•OH) inhibition assay showed that EE exhibited higher activity than gallic acid at the maximum concentration used (166.6 µg/mL). Even at the lowest tested concentration, EE showed over 70% of •OH inhibition (IC_{50} < 6.25 µg/mL). Phytochemical analysis revealed the presence of cytidine-5'-diphosphate, caffeic acid-3-O-glucuronide, isocernumidin, cernumidin, hyperin, quercitrin, isorhamnetin-3-O-galactoside, isorhamnetin-3-O-glucoside, quercetin-7-O-rhamnoside, afzelin, and isorhamnetin-3-O-rhamnoside. These results contribute for better understanding of *S. cernuum* biological potential and expand the knowledge of its phytochemical constituents.

Keywords: *Solanum cernuum, Antioxidant activity, Phytochemical profile, Mass spectrometry*

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