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IDENTIFICATION OF PHENOLIC COMPOUNDS BY HPLC-ESI-MS AND DETERMINATION OF ANTIOXIDANT ACTIVITY OF SPECIES OF THE ASTERACEAE FAMILY

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The Asteraceae family is known for its vast number of species and the pharmacological activities its of many plants. However, some species remain understudied, including *Lucilia lycopodioides*, *Lessingianthus* cf. *adenophyllus*, and *Richterago discoidea*. Therefore, this study aimed to identify phenolic compounds in acetone extracts using high-performance liquid chromatography-mass spectrometry (HPLC-ESI-MS) and to determine the antioxidant activity of these three species. The Folin-Ciocalteu reagent was used to determine the phenolic compounds, while DPPH was used for the antioxidant activity. HPLC-ESI-MS analyses were performed on a Thermo Scientific Ultimate 3000 liquid chromatograph operating in negative mode with gradient programming. The fragmentation study was performed using a parallel reaction monitoring (PRM) experiment. All three species described showed a high potential for antioxidant activity, with *Lucilia lycopodioides* presenting the highest total phenolic content (357.45 mg/g) in comparison *to Lessingianthus cf. adenophyllus* (351.21 mg/g) and *Richterago discoidea* (205.01 mg/g), as well as the result for free radical scavenging activity using DPPH with values of 91.46% at 500 ppm, for *Lucilia lycopodioides*; 88.82% at 500 ppm, for *Lessingianthus* cf. *adenophyllus* and 66.14% at 500 ppm, for *Richterago discoidea*, with the first species reaching values very close to the gallic acid standard (95.85% at 500 ppm). Using HPLC-ESI-MS, by comparison with phenolic compound standards, it was possible to identify the following compounds in the three species: protocatechuic acid; *p*-coumaric acid; caffeic acid; luteolin and chlorogenic acid. Furthermore, it was possible to identify rutin in *Lessingianthus* cf. *adenophyllus*. The conclusion is that all three species under study presented good results in antioxidant activity, with *Lucilia lycopodioides* being the most promising, indicating greater pharmacological potential against pathologies caused by oxidative stress.

Keywords: *Lucilia lycopodioides*, *Lessingianthus* cf. *adenophyllus*, *Richterago discoidea*, *antioxidant activity*

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