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CHEMICAL STUDY AND EVALUATION OF THE ANTIOXIDANT ACTIVITY OF WOOD RESIDUES FROM THE BARK OF *Andira parviflora Ducke*

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The Amazon is recognized as the largest tropical rainforest on the planet, harboring a wide diversity of plant species of economic and medicinal interest. Among them is *Andira parviflora* (sucupira-vermelha), belonging to the Fabaceae family, whose timber exploitation generates large volumes of underutilized residues. In this study, countercurrent chromatography was performed to simplify fractions with antioxidant potential from the ethanolic extract of *A. parviflora* bark and to characterize them using standard techniques. The chloroform (LSV02) and ethyl acetate (LSV03) fractions were evaluated by thin-layer chromatography (TLC) using universal reagents and DPPH radical solution for qualitative radical reduction analysis, and subsequently subjected to fractionation by High-Performance Countercurrent Chromatography (HPCCC) with seven variations of solvent systems composed of hexane:ethyl acetate:methanol:water (HEMWat) (v/v/v/v). The samples were characterized by mass spectrometry (MS) and nuclear magnetic resonance (NMR). TLC analyses of LSV02 and LSV03 suggested the presence of flavonoids, coumarins, terpenoids, and phenolic compounds, and also revealed yellow spots indicative of DPPH radical inhibition, suggesting antioxidant activity. MS analyses of flavonoid-rich fractions (HPCCC) indicated the presence of genistein, calycosin, prunetin, medicarpin, and biochanin A, the latter confirmed by NMR and isolated for the first time from the bark of this species. Qualitative TLC analyses revealed distinct chemical classes, highlighting the complexity of the plant matrix. Fractionation by HPCCC yielded flavonoid-enriched fractions with the isolation of Biochanin A (12 mg) from 200 mg of material injected into the chromatograph. Thus, the research confirmed the antioxidant potential of *A. parviflora* bark and emphasized its relevance as a source of isoflavones and other secondary metabolites of pharmaceutical interest, adding value to a timber residue with possible biotechnological application.

[1] GARCIA, M. G. *et al.* Identification of Isoflavonoids in Wood Residue from Swartzia laevicarpa, Dipteryx odorata, and Andira parviflora. **Chemistry of Natural Compounds**, v. 54, n. 5, p. 856–859, 2018.
[2] WAGNER, H.; BLADT, S. **Plant Drug Analysis: A Thin Layer Chromatography Atlas.** 2a ed. ed. Berlin: Springer Verlag Berlin Heidelberg, 1996.

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