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ALKAMIDES FROM Zanthoxylum rhoifolium ROOT

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Zanthoxylum rhoifolium Lam. (Rutaceae), commonly known as "mamica-de-cadela", "limãozinho", or "tinguaciba", is a species widely distributed across South America, predominantly occurring in the Brazilian biomes of the Cerrado, Atlantic Forest, and Amazon. Species of the genus *Zanthoxylum* are recognized for their phytochemical diversity, containing alkaloids, phenolic compounds (such as lignans, coumarins, and flavonoids), as well as steroids and terpenes, located in various parts of the plant, including roots, stems, branches, and leaves. Given this context, phytochemical investigations focused on the isolation of metabolites. Metabolites are of great relevance, especially considering the chemical and pharmacological potential of this species. In this study, we aimed to isolate and identify compounds present in *Z. rhoifolium*. The hexane extract of the roots (11.5 g), obtained by cold maceration, was subjected to fractionation procedures using Column Chromatography (CC), Preparative Thin-Layer Chromatography (PTLC), and High-Performance Liquid Chromatography (HPLC). The structural characterization of the isolated compounds was performed using Nuclear Magnetic Resonance spectroscopy (1D and 2D ^{1}H and ^{13}C NMR) and Mass Spectrometry (MS). As a result, four alkamides were isolated: γ-sanshool, hazaleamide, (2E,4E,8Z,11E)-N-isobutyltetradeca-2,4,8,11-tetraenamide, and (2E,4E,8Z)-N-isobutyltetradeca-2,4,8-trienamide. Although these substances have previously been reported in other species of the genus, their isolation reinforces the chemical potential of *Z. rhoifolium*. Numerous studies have highlighted promising pharmacological activities of alkamides—analgesic, anti-inflammatory, antimicrobial, and antiparasitic—justifying further research to evaluate their biological properties and therapeutic potential.

Keywords: *Mamica-de-Cadela, compounds, amides, phytochemistry, isolation, HPLC*