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DEREPLICATION AND ISOLATION OF SECONDARY METABOLITES FROM Protium warmingianum TWIG EXTRACTS

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The genus Protium (family Burseraceae) stands out for its wide distribution and for being home to 84 of the 175 globally recognized species in Brazil, primarily in the Amazon. These species are known for producing aromatic resins with potential applications in the pharmaceutical and cosmetic industries. Despite the genus' relevance, the species *Protium warmingianum*, the target of this work and endemic to Rio de Janeiro, remained chemically unexplored. This study aimed to identify, isolate, and characterize the secondary metabolites of *P. warmingianum*. Leaf and twig samples were subjected to maceration with methanol, generating crude extracts. Preliminary analysis by LC-MS/MS and data processing on the MZMine and GNPS platforms allowed the annotation of dozens of natural products, including flavonoids, lignans, coumarins, and terpenoids, classes of compounds known for their biological activities. For structural confirmation, the dichloromethane partition of the branches was fractionated by chromatography on a flash silica column. The fractions obtained were analyzed by ^{1}H NMR and ^{13}C NMR, which enabled the identification of classes such as triterpenes and phenylpropanoids, establishing, for the first time, the chemical profile of this species. Regarding the biological evaluation, the partitions and fractions were subjected to preliminary antimicrobial tests, which, however, did not demonstrate positive results. Future investigations are planned to explore other biological activities, such as antioxidant, anti-inflammatory, and cytotoxic, based on the profile of the identified compounds. Currently, the process of identifying and annotating the substances is ongoing, and their complete characterization will contribute to a more comprehensive understanding of the secondary metabolism of the species *P. warmingianum* and the genus *Protium*.

Keywords: *Dereplication, Protium warmingianum, flavonoid, coumarin. phytochemistry, secondary metabolism.*