



**Phytochemical study of *Calycophyllum spruceanum* Benth (Rubiaceae)  
an Amazonian plant species traditionally used as skin protection,  
aiming at the identification of compounds useful for the cosmetic sector**

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Brazilian biodiversity has been noted for its high biological and chemical diversity, and the scientific studies of this fantastic laboratory has proven to be important for the global economy, and the development of high technology and innovation have proven to generate fine products with monetary value, which contribute to the country's wealth. The sustainable use of biodiversity demands special programs with joint efforts of both the academic and the productive sector (industries), aiming to transform knowledge in products with immediate commercialization. Thus, the flora takes on increasingly unthinkable values since there is an adequate scientific and technological research, bringing not only economic but also social progress for our country. The *Calycophyllum* genus belongs to the Rubiaceae's family, which is known for its high diversity of secondary metabolites, and presents a wide range of biological activities (antifungal, antibacterial, antiviral and pesticide). It is largely used by people of South America against skin diseases, stomach, diabetes, parasites, cancer, among others, increasing the interest in phytochemical researches of species of this family. This study has the objective to conduct the biomonitored phytochemical study of leaves, branches and stem bark extracts of *Calycophyllum spruceanum* Benth (Rubiaceae), targeting the cosmetic potential of this plant, and the identification and structural elucidation of active substances. Different polarities extracts were prepared (hexanic, ethyl acetate, methanolic, hydroalcoholic (70:30 EtOH:H<sub>2</sub>O v/v) and aqueous (by decoction extraction) and were analyzed by High Performance Liquid Chromatography (HPLC-DAD) and Nuclear Magnetic Resonance (<sup>1</sup>H NMR) to explore their metabolic's profiles, followed by biological assays (DPPH and ABTS<sup>+</sup> scavenging) for the determination of antioxidant activity and selection of the promising extract. The hydroalcoholic extract of leaves showed to be the most promising to guide the research considering antioxidant capacity. This extract was microfractionated using a mixture of methanol and water in different proportions as mobile phase, obtaining nine fractions. These fractions were tested against DPPH antioxidant assay, and two fractions were selected and subjected to chromatographic (HPLC-DAD and HPLC-ESI/MS) and spectroscopic analysis (<sup>1</sup>H NMR, <sup>13</sup>C NMR, 1D TOCSY). It was possible to identify phenolic compounds that can act as potentially active antioxidants. It is expected that these information provide subsidies for applying the plant species for functional cosmetic line.

**References:**

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