



ANTIMICROBIAL ACTIVITY AND STRUCTURAL ELUCIDATION OF ISOLATED COMPOUNDS FROM *Labramia bojeri* A. DC LEAVES

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Sapotaceae is a family of some 35-75 ill-defined genera and 800 species, most of which are tropical trees. *Labramia bojeri* A. DC is a tree native to Madagascar that occurs in Southeast Brazil, mainly near beaches [1]. To combat the emerging resistance of microorganisms to some antibiotics and antifungal drugs, numerous antimicrobial agents are currently being evaluated [2]. Accordingly, medicinal plants have become the focus of intensive research. The chemical composition of *L. bojeri* is not yet fully known. For this purpose, the separation of compounds was performed by chromatographic methods (LC flash and preparative-HPLC, with H₂O–CH₃CN gradients) using the high polarity fraction obtained from ethanol extracts of the leaves. The structures of compounds were elucidated through 1D and 2D NMR spectroscopic data (in CD₃OD on a Bruker 500 MHz spectrometer) as well as MS data (High-resolution ESITOFMS techniques). The antimicrobial activity of ethanol extract, fractions and isolated compounds from the *L. bojeri* leaves was evaluated by determining the minimal inhibitory concentrations (MICs) in relation to a Gram-positive bacterium, a yeast and a dermatophyte with the broth microdilution technique [3]. The MIC value was obtained after 24 hours, 18 hours and 5 days for their respective pathogens. The structural elucidation showed that the isolated compounds from *L. bojeri* leaves are isoprenoid (Lb23: m/z 371.2070 [M + H]⁺) and saponins of high molecular weight (Lb32: m/z 1399.6348 [M + FA – H][–]; Lb33 m/z 1483.6957 [M – H₂O + H]⁺; Lb34: m/z 1413.6597 [M + FA – H][–]; Lb35: m/z = 1205.5983 [M – H₂O + H]⁺). The ethanol extract was active against *Staphylococcus aureus* and *Candida albicans* (MICs of 64 and 16 µg/mL, respectively), whereas, it was moderately active in countering *Trichophyton rubrum* (MIC=256 µg/mL). The high polarity fraction revealed antimicrobial activities against *S. aureus* and *C. albicans* (MICs of 64 µg/mL for both pathogens) however, the dermatophyte *T. rubrum* was resistant. The fraction obtained with ethyl acetate (formed by medium- and low-polarity compounds) showed interesting *in vitro* antimicrobial activities against the bacterium, yeasts and dermatophyte (MICs of 64, 16 and 128 µg/mL, resp.). The isolated compounds were active in opposing all pathogens. Lb33 and Lb35 proved to be potentially active against *S. aureus* (MICs of 8 and 16 µg/mL, resp.), while Lb35 also showed high activity against *T. rubrum* (MICs of 32 µg/mL). In conclusion, the ethanol extract, fractions and isolated compounds from *L. bojeri* leaves demonstrated potential antimicrobial action.

References:

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