TITLE: ANTIMICROBIAL ACTIVITY OF 7-HYDROXY-4',6-DIMETHOXYISOLATED OF STEM FROM *Myroxylon peruiferum* L.f

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ABSTRACT:

In recent years there has been an increasing interest in the use of natural substances as alternative antimicrobial agents. Such interest can be mainly explained by the emergence of resistant strains to conventional antibiotics. Thus, the objective of this study was to describe the antimicrobial activity of 7-hydroxy-4',6-dimethoxy-isoflavone isolated from *Myroxylon peruiferum* L.f. Stem of *M. peruiferum* L.f were collected from Uruburetama massif, located in the Soledade district of Itapajé (Ceará State, Brazil). The voucher specimen was archived at Herbarium the State University Acaraú Valley under registration number 19240. The stem (1000g) was dried at room temperature, triturated and subjected to cold extraction with ethanol for three days. The chloroform fraction was subjected to column chromatography using increasing eluents and resulted in 499 fractions. Fractions (F'202-277), resulted from extraction in chloroform/ethyl acetate 8:2 were grouped by similarity, yielding an off-white material of 20 mg that was purified and analyzed. The minimum inhibitory concentration (MIC), minimum bactericidal concentration (MBC) and minimum fungicidal concentration (MFC) was determined by the microdilution broth method against *Staphylococcus aureus* ATCC 25923, *Staphylococcus epidermidis* ATCC 12228, *Escherichia coli* ATCC 11303, *Pseudomonas aeruginosa* ATCC 10145, *Trichophyton rubrum* 0207, 0208, 0209 and 0210, *Candida albicans* ATCC 90028, *Candida tropicalis* LABMIC 0110, *Candida parapsilosis* LABMIC 0123 e *Candida krusei* LABMIC 0124. The results of the antibacterial activity showed that isoflavone was able to inhibit the microbial growth of *S. aureus* and *S. epidermidis* at 2000 μg/mL for both strains. On the other hand, the same effect was not seen on Gram-negative bacteria. Regarding antifungal activity, the results showed MIC and MFC values for the isoflavone of 156 and 312 μg/mL against *T. rubrum* LABMIC 0207, 312 and 625 μg/mL against *T. rubrum* LABMIC 0208, 625 and 1.250 μg/mL against *T. rubrum* LABMIC 0209 and 1.250 and 2.500 μg/mL against *T. rubrum* LABMIC 0210, respectively. Was observed that the isoflavone did not present antifungal activity against the yeast strains tested. We found that 7-hydroxy-4',6-dimethoxy-isoflavone from *Myroxylon peruiferum* exhibits antifungal e antibacterial activity.

Keywords: *Myroxylon peruiferum* L.f., Microdilution broth method, Isoflavone.