Phytochemical characterization of the hydroalcoholic extract of the semiarid plant *Mimosa tenuiflora* (Willd.) Poir. by GC/MS

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ABSTRACT

Mimosa tenuiflora (Willd.) Poir is popularly known as Jurema preta and belongs to the Fabaceae family. It is found in several states of the Brazilian Northeast, especially in the Caatinga/Semiarid region. It is often used for its anti-inflammatory, analgesic, curative and/or antimicrobial effects. Therefore, methodologies aimed at identifying the compounds of *M. tenuiflora* have been necessary in order to better understand its chemical composition and biological properties. Therefore, the present study aimed to identify the phytochemical compounds from hydroalcoholic extracts of the stem, bark, leaves and branches of *M. tenuiflora*, bark, leaves and branches of *M. tenuiflora* using UFLC-DAD-FLUOR and GC/MS techniques, as well as to investigate its to study their biological properties against microorganisms of clinical importance. Initially, extracts from the bark, stem, branches and leaves of *M. tenuiflora* were prepared by maceration with a hydroalcoholic solution (70:30, EtOH:water) and then analyzed by UFLC-DAD-FLUOR. Subsequently, all the extracts were subjected to acid/base extraction with HCl and NaOH, both at a concentration of 1%. In the UFLC-DAD-FLUOR method, analytical standards of tryptamine, serotonin and melatonin were spiked to monitor for potential indole alkaloids. In addition, all extracts were analyzed by GC/MS to provide an overview of the chemical composition of the species. In GC/MS with an SI criterion of 90 molecules of *Mimosa t.* were identified from the total alkaloid extract of pernambuco: in the stem, dopamine; in the bark, N,N dimethyltryptamine; in the crude extract, molecules of tyramine, dopamine, N,N-diimethyltryptamine, and the new molecule were identified. Subsequently, a chromatographic column was made with silica gel to try to isolate the alkaloids from the extract of the bark of *Mimosa tenuiflora* from Alagoas, with this the fraction was collected in a tube with methanol, in which two possible different alkaloids were obtained in the range of 278 nm with retention times of 3.39 min and 6.26 min. min. In this tube of the fraction with methanol, the sample was injected to be monitored by UV-Vis spectroscopy, which detected two substances at the wavelength of 278 nm, confirming the presence of indole alkaloids. Finally, NMR will be applied to identify potential compounds already known in the literature in order to validate some phytochemical components. Finally, the extracts will be evaluated against different strains of microorganisms of biological importance, such as *Staphylococcus aureus* and *Candida albicans*.