

Biological evaluation of the essential oil of *Myrciaria floribunda*

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Myrciaria floribunda (H. West ex Willd.) belongs to Myrtaceae family and it is native plant species from Brazil. The species has edible fruits such as other species from the same family and it is still little studied. The phytochemical and biological studies have been restricted to specimens collected in Rio de Janeiro (1,2). This work shows the chemical composition and the antileishmanial and antitrypanosomal activities of the essential oil extracted from stems of *M. floribunda* collected in Amazon region (MFSEOAM). The plant material was collected in Ducke Reserve (Manaus, AM). The stems were fragmented and submitted to hydrodistillation during 2 h using a modified Clevenger-type apparatus. The essential oil was analyzed by gas chromatography apparatus coupled to mass spectrometry (GC-MS) in an Agilent system (6890N and 5973N), using a DB-5MS column (30 m × 0.25 mm × 0.25 µm), helium as carrier gas at 1mL/min and electron ionization mode at 70 eV. The oven temperature varied from 50°C to 300° at 4°C/min. The composition of the essential oil was determined by comparison of their retention indices and mass spectra with those reported in the literature (3) or presented in the Wiley data system library of the equipment. The essential oil was tested against promastigotes of *Leishmania amazonensis* (IFLA/BR/1967/PH8) and *Leishmania infantum* (MHOM/BR/1974/PP75) and epimastigotes of *Trypanosoma cruzi* Y. The IC₅₀ was determined performing the rezasurin dye assay (4) with the successive dilution of the essential oil in DMSO. The GC-MS analysis of MFSEOAM indicated that the main constituents were germacrene B (19.5%), bicyclogermacrene (16.4%) and germacrene D (15.2%). The chemical composition of MFSEOAM was quite different from the chemical composition of the essential oils obtained from specimens collected in Rio de Janeiro, where the essential oil from leaves and flowers were rich in 1,8-cineole (2), and the essential oil of the fruits was rich in β-cis-ocimene (1). In the biological assays against *L. amazonensis* and *L. infantum*, MFSEOAM exhibited IC₅₀ values of 213.2 µg/mL and 200.6 µg/mL, respectively. In the assays against the epimastigote forms of *T. cruzi*, only 30% of growth inhibition were observed at 500 µg/mL, and it was not possible to determine the IC₅₀. In conclusion, it was possible verify that the chemical composition of the essential oil obtained from *M. floribunda* can change according the region of the collection and the part of the plant used. In addition, MFSEOAM has low antileishmanial and antitrypanosomal activities. However, other assays have been performed to enhance the activity of this essential oil.

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