

B195 Antimycobacterial screening of crude extracts obtained from medicinal plants growing in Northeast Mexico, using a native resistant strain

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The resurgence of tuberculosis as a major disease in many parts of the world is prompting the search for novel compounds, active against *Mycobacterium tuberculosis*. According to the WHO, there were 8.4 million new cases of TB in 1999 (1). According to data obtained from the IMSS (northeast delegation), 25% of the cases appearing in Mexico came from this region. The problem is becoming a major concern on account of the prevalence of resistant strains from *M.t.* More than 50% of the strains isolated from patients in our region were resistant to at least two of the antibiotics commonly used for TB treatment (2). In a first effort to identify sources for bioassay-directed isolation of novel compounds active against resistant strains of *Mycobacterium tuberculosis*, extracts of 20 plant species growing in northeast Mexico were screened. Plants were selected on basis of ethnopharmacological criteria. Methanolic and aqueous extracts were obtained from each part of the plants under test. Antimycobacterial activity was performed by means of the redox-dye Alamar Blue test (3) using H₃₇RV and a native strain resistant to five antibiotics (CIBIN/umf 28:99) isolated and characterized in our laboratory. Positive assays were retested by means of the Bactec 460. From this first screening we obtained the following results a) Alamar Blue has a good prediction capability, being cheaper, more simple, and rapid, as many extracts can be tested in the same microtitre plate, b) DMSO was found to potentiate the activity from extracts, c) methanolic extracts obtained from roots and leaves of *Leucophyllum frutescens* (cenizo) showed the greatest activity in the resistant strain by both methods employed and was considered as a source for a following bioassay-directed fractionation.

Acknowledgments: We thank PAICYT through grant 443/2001 and CONACYT 36544-N.

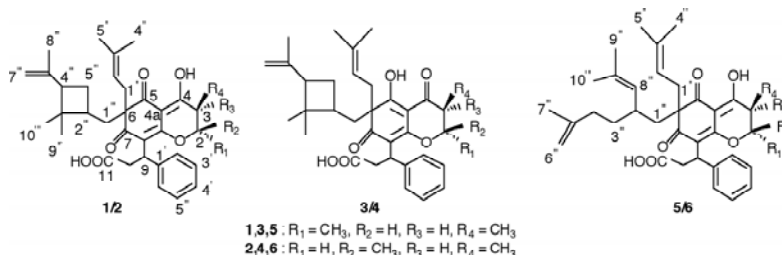
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B196 New chromanone acids with antibacterial activity from *Calophyllum brasiliense*

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The bark latex of *Calophyllum brasiliense* (Clusiaceae) is used in the traditional medicine of the Popoluca (Mexico) to treat toothache, and to prevent wound infections by microorganisms (1). Using antibacterial activity against gram-positive bacteria as a lead, bioactivity-guided fractionation of the n-hexane and ethyl acetate extract of the bark of *C. brasiliense* afforded six new chromanone acids (**1/2**, **3/4** and **5/6**) as three inseparable mixtures, together with the three known triterpenes, friedelin, friedelan-3-ol, and betulinic acid. The structures of the isolates were elucidated on the basis of extensive 1D and 2D NMR experiments, as well as high resolution mass spectrometry. Compounds **1/2** showed a MIC value of 1 µg/ml against *B. cereus* and were significantly more active than the reference compound chloramphenicol (MIC of 4 µg/ml), whereas **3/4** and **5/6** exhibited MIC values of 8 and 16 µg/ml, respectively. All compounds were not cytotoxic against KB cancer cells (ATCC CCL 17) up to 20 µg/ml.



References: 1. Leonti, M. et al. (2001) Proceedings of the 42nd Annual Meeting of the American Society of Pharmacognosy.