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Anti-inflammatory activity of *Bixa orellana* extract against *Mycobacterium abscessus* subsp. *bolletii***Eduardo Martins de Sousa, José Lima Viana, Adrielle Zagnignan, Luis Felipe Lima Lobato, Afonso Gomes Abreu, Luís Cláudio Nascimento da Silva, Lídio Gonçalves Lima Neto, Joicy Cortez de Sá, Eduardo Buozi Moffa and Leticia Machado Gonçalves**
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Infectious diseases continue to be one of the biggest health problems in the world, affecting millions of people annually. *M. abscessus* and other species of rapidly growing mycobacteria (RGM) are naturally resistant to antimicrobial compounds and disinfectants because they have an impermeable cell wall composed by peptidoglycan and mycolic acids. These RGM are responsible for various hospital outbreaks worldwide, causing lung infections in patients with cystic fibrosis, chronic lung disease (bronchiectasis, nodules and cavitations), post-surgical infections and skin and soft tissue infections in immunocompromised patients. The resistance of *M. abscessus* (Mabs) to the medications used in current therapy challenges the search for new treatment strategies. Previous studies on the search for new natural compounds with antimicrobial action highlighted the potential of *Bixa orellana* (urucum). The seeds of this plant are already used in folk medicine for treating heart disease, gastrointestinal problems and respiratory infections. In this study, we evaluated potential anti-inflammatory activities of hydroalcoholic (BoEH) and ethyl acetate (BoEA) extracts of *B. orellana* leaves, using a murine model of peritonitis induced by heat killed *Mabs*. C57BL/6 mice were orally treated with different concentrations of BoEH or BoEA. After one hour, peritonitis was induced by inoculation of 1×10^8 CFU of heat killed *Mabs*. BoEH and BoEA inhibited the migration of total leukocytes (Figure 1A-B), migration of polymorphonuclear cells (Figure 1C-D) and mononuclear cells (Figure 1E-F) into the peritoneum in the periods analyzed 4 and 24 hours after the induction of peritonitis. Our results suggest anti-inflammatory actions of the extracts tested, indicating this plant as natural source of compounds with potential for pharmacological and biotechnological applications.

Biography

Eduardo Martins de Sousa holds a Bachelor's degree in Biomedicine, a Master's degree in Tropical Medicine (Immunology) from the Institute of Tropical Pathology and Public Health of the Federal Goiás University. He has obtained his PhD degree in Tropical Medicine (Immunology) from the Institute of Tropical Pathology and Public Health of the Goiás Federal University, being part of a Sandwich Doctorate held at the Institute of Molecular and Cellular Biology of the University of Porto, Portugal. Currently, he is a Professor of the Post-graduate program in Parasite Biology (Master's degree) at the University Center of Maranhão (UNICEUMA). He is an Associate Professor of Post-Graduate program in Biodiversity and Biotechnology of the Bionorte Network (PPG-BIONORTE) (Doctoral level). He has experience in Immunology, with emphasis in Applied Immunology, working mainly on the following topics: *Mycobacterium tuberculosis*, *Mycobacterium massiliense*, ELISA, experimental infection, vaccine, flow cytometry, real-time PCR and mice.

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