

Antibacterial activity of aqueous extracts of Ilex Paraguariensis St. Hil leaves against *Staphylococcus aureus***Margarita Laczeski**

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Methicillin-resistant *Staphylococcus aureus* (MRSA) is a major nosocomial pathogen that causes severe morbidity and mortality worldwide. The emergence of resistance against its classical pharmacological treatment generates interest in the development of new alternatives. *Ilex Paraguariensis* St. Hil, commonly called “yerba mate”, is a medium-tall tree from South America; it considered a source of bioactive principles for the food and pharmaceutical industry.

The present study aimed to evaluate the antibacterial activity of aqueous extracts of *Ilex Paraguariensis* leaves against *Staphylococcus aureus*. *Staphylococcus aureus* ATCC 43300 (MRSA) and *Staphylococcus aureus* ATCC 25923 (MSSA) were studied with aqueous extracts obtained from *Ilex Paraguariensis* leaves dried at room temperature and at 80°C. Dry extracts were obtained by controlled digestion. Sterile water was used as extraction solvents. Extracted solutions were concentrated in a rotary evaporator and then dried at 37°C. The Minimum Inhibitory Dose (MID) was determined by the disc diffusion test and the inhibition diameters (ID) were measured. The effective dose used on each disc was 15, 10, 5, 1 and 0.5 mg. A disc impregnated with sterile water was used as a negative control. Commercial disc of erythromycin 15 µg (Britania S.A., Argentina) was used as positive control.

This test was performed in triplicate. Only the aqueous extract obtained from leaves dried at room temperature showed antibacterial activity against both strains with a MID of 5 mg/disc. Whereas the aqueous extract obtained from leaves dried at 80°C did not show inhibitory activity at all. We conclude that the aqueous extract of this plant may be an effective potential candidate for the development of new strategies to treat *Staphylococcus aureus* infections. It is necessary to continue with studies to identify and characterize the metabolites responsible for antibacterial activity considering that temperatures above 80°C inhibit its antibacterial activity.

Biography

Margarita Laczeski is a Biochemist, and a Microbiology Specialist, she has done her PhD in Biochemistry from the Universidad Nacional de Tucumán. She is an Associate Professor of Bacteriology and Full Professor of General Physiology at the National University of Misiones. She is also a Researcher Associate at the National Council of Scientific and Technical Research (CONICET, initials in Spanish). Her interest and scientific development are mainly directed to the area of bacteriology and molecular biology techniques with orientation to the search for antimicrobial active principles in native plants of the province of Misiones, Argentina, and biotechnological applications of bacteria as bio fertilizer.