Determination of the Antimicrobial Activity of Heliotropium arborescens in Cultures of Bacteria that Cause Infection in the Respiratory Tract

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The present study is intended to investigate how the ethanol extract from the leaves of Heliotropium arborescens L., influences the growth of bacteria that cause respiratory tract infections. For this, a trip to San Pedro de Pallac was conducted to collect a first sample in order to determine the taxonomic classification of the plant species, as well as a survey to local residents about the medicinal uses of the plant. Next, we collected the plant sample from the same place. The sample was dissected and ground, and the ethanol extraction was carried out. The experimental part of the research was conducted in two stages: first, the ethanol extract was confronted with attenuated bacteria Streptococcus pyogenes. In the second stage, two fractions of petroleum ether and ethyl acetate were prepared from ethanol extract. The ethanol extract was confronted to bacterial strains obtained from clinical samples. To determine the antibacterial properties of ethanol extract, an agar diffusion test was performed using an attenuated strain of Streptococcus pyogenes grown in Petri dishes containing Mueller Hinton agar. We found that the first dilutions of the ethanol extract completely inhibited bacteria growth because it was too concentrated; We were able to conclude that the plant species studied has antimicrobial activity. In the second part of the research, new fractions of petroleum ether and ethyl acetate were diluted in DMSO in the same manner as in the first test, and bacterial confrontations were carried out with Pseudomonas aeruginosa, Acinetobacter spp, Klebsiella pneumoniae and Proteus spp. strains taken from clinical samples. The results obtained in the experimental phase confirm the hypothesis: that the ethanolic extract would have antibacterial properties.

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Third Award of $1,000