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Abstract

Determination Of The Antimicrobial Activity In Extracts Of *Bacillus Thuringiensis* Isolated From Soil

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Abstract: *Bacillus* species produce secondary metabolites that are the object of natural product chemistry studies. Among *Bacillus* species, many isolates of *B. thuringiensis* (Bt) also produce an assortment of various natural compounds that are secreted into the culture medium with broad biological activities, such as antimicrobial, antiviral and antitumor activities, that enable the bacterium to survive in its natural environment other virulence factors. The objective of this study was to evaluate the potential of different Bt strains isolated from soils in order to produce biologically active substances like antibacterials. *Bacillus* sp strains were collected from soils of different locations of Mexico. Their protein content was analyzed by SDS-PAGE distinguishing Bt from *B. cereus*. A screening of the isolates was realized extracting the secondary metabolites using amberlite resin of several strains. The extractions were realized in TSA culture media, due to it was the best for secondary metabolites production. The antimicrobial activity of the extracts of secondary bacterial metabolites was evaluated using disk diffusion tests against diverse bacteria such as, *Micrococcus luteus*, *Staphylococcus aureus*, *Serratia marcescens*, *Klebsiella pneumoniae*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Staphylococcus saprophyticus*, *Streptococcus agalactiae*, *Salmonella sp*, *Bacillus cereus*, *Vibrio cholerae*, *Vibrio parahaemolyticus* and *Shigella sp* using common antibiotics as positive controls. We have some extracts of Bt, with strong inhibitory activity against many of the bacteria before mentioned which have clinical importance and have developed resistance to many class of antibiotic that are in use. We are purifying and characterizing chemically the compounds responsible for this antibacterial activity.

Keywords: melanin, secondary metabolites, *Bacillus thuringiensis*.

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