

TITLE: ANTIMICROBIAL POTENTIAL OF CRUDE EXTRACT PRODUCED BY *Streptomyces* AGAINST PATHOGENIC MICROORGANISMS

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ABSTRACT:

The intensive use of antibiotics has triggered concerns in human and animal health. Multiresistant bacteria arise in the ratio of constant use of antibiotics and are responsible for different infection scenarios in all the world, which has pointed to the need to the discovery of the new drugs with the ability to control the bacterial multidrug resistance. In this scenario, the actinobacteria, Gram-positive bacterial which has a high GC (%) content, are considered the most prolific sources of secondary metabolites, with a variety of applications, like anti-tumor activity, herbicides, fungicides, biofertilizers, being responsible for about 45% of antibiotics already discovered so far. Thus, the objective of this work was to evaluate the antimicrobial activity of the metabolites produced by twelve bacteria of the genus *Streptomyces*. The lyophilized, heavy and resuspended extracts in milli Q water, after filtration (0.22 µm membrane), were assayed against a yeast *Candida albicans* (ATCC 18804), the gram-negative bacterium *Actinobacillus pleuropneumoniae* (APP) serotype 1 (Shope) (ATCC 27088) and the Gram-positive bacteria *Staphylococcus aureus* (ATCC 6538), by the disc-diffusion test (2 mg per disc). The positive controls were the antibiotics nystatin (30 µg) for *C. albicans*, tetracycline (30 µg) for APP and ampicillin (10 µg) for *S. aureus*, and the negative controls were disc with only sterilized distilled water for *C. albicans* and saline solution (0.85%) for the bacteria. After 24 hours of incubation at 37 °C, the diameter of the zone of inhibition was measured with the aid of a digital meter for the extracts that showed activity. The crude extract of the only one *Streptomyces* showed activity against *C. albicans*, on the other hand, seven showed activity against APP and five against *S. aureus*, with different inhibition halos. Among the twelve isolates evaluated, ten of these showed one or more activities antimicrobial. Thus, there are isolated potential producers of antibiotics against yeasts, Gram positive and Gram negative bacteria, pathogenic microorganisms.

Keywords: Antibiosis, Actinobacteria, Bioactive compound

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