

TITLE: ISOLATION, IDENTIFICATION AND ENZYMATIC PROSPECTION OF Streptomyces ISOLATED FROM RIZOSFERIC SOIL FROM AMAZON.

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ABSTRACT:

Actinobacteria correspond to a heterogeneous group of filamentous bacteria, which naturally inhabit the soil, adapt to various environmental conditions, produce metabolites and are capable of colonizing the rhizosphere and internal tissue of plants. Among these bacteria the Streptomyces genus has great importance because it is the group with the largest number of species producing bioactive compounds, being responsible for the production of approximately 80% of the antibiotics of natural origin produced by the pharmaceutical industry. In this context, the Amazon region is a poorly researched environment with great biotechnological potential. Therefore, the objective of this work was to isolate actinobacteria of the genus Streptomyces from the rhizosphere of *Aniba parviflora* (Macacaporanga) and to evaluate the production of enzymes of industrial interest. The isolation of the rhizospheric actinobacterium was performed by the serial dilution technique using the ALA (Arginine Yeast Agar) culture medium and identified as through cultural, micromorphological and molecular characteristics, enzyme activity tests were performed. Lipase production was assessed from the inoculation of the strains in the Sierra medium containing Tween 80 and Tween 20, respectively, for 10 days at 30°C. To determine catalase production, the actinobacteria was cultured in NB culture medium at 28°C for 10 days and colony samples were then transferred to sterile microscopic slides and then hydrogen peroxide (H₂O₂) was added for development. Hemolysin production was assessed from the formation of hemolysis on Blood Agar after incubation of the strain for 7 days at 30°C. The enzymatic potential was determined by the enzymatic index (EI) by the ratio of the diameter of the halo hydrolysis (mm) to the diameter of the colony (mm). Analysis of the 781 bp sequence of the 16s DNA showed that the MPO-1 actinobacteria belong to the genus Streptomyces, presenting 99% similarity to *Streptomyces cinereus*, and this strain proved to be a producer of lipase, catalase and hemolysin (EI = 1,7) . These results corroborate the need to increase the amount of research in the Amazon, since this biome has an enormous microbial diversity, which must be studied.

KEYWORDS: enzymatic diversity, Amazon, soil actinobacteria.