TITLE: STANDARDIZATION OF THE CULTURE METHOD FOR OBTAINING ANTIMICROBIAL METABOLITES PRODUCED BY *Streptomyces* sp. MPO11, A NATIVE ACTINOMYCETE OF RIBOSPHERE OF *Aniba parviflora* (MACACAPORANGA).

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ABSTRACT: Several substances derived from secondary microbial metabolism have pharmacological action. Among the microorganisms of interest, actinobacteria are targets of the biotechnology industry because of the diversity of bioactive substances produced. The bioprospecting of this microbial group in seldom explored natural sources and their ecological interactions may result in the discovery of chemically diverse and biologically active compounds, a promising strategy in the search for new antibiotics. Considering that the Amazon is a potential biome in the search for microorganisms, the objective of this study was to select strains of actinobacteria of the genus Streptomyces native to the rhizosphere of Aniba parviflora (macacaporanga), producing antimicrobial substances with action on microorganisms of clinical interest. Prospecting of antimicrobial substances was carried out by the agarose block method against strains of Candida albricans, Rhodococcus equi, Escherichia coli, Micrococcus luteus, Enterococcus faecalis and Enterococcus faecium. The strain with the best antimicrobial performance was selected to perform a submerged culture for 196h aiming to standardize the method of obtaining the bioactive metabolites, being monitored daily the biomass produced, the pH and the antimicrobial activity of the cell free metabolic liquid. Of the 9 strains, Streptomyces MPO11 showed a spectrum of action between Gram positive, Gram negative and yeast bacteria. Secondary metabolism was activated in 24h, with a peak production of 72h of culture. During the cultivation, the metabolic liquid showed pH variation between 5.59 and 7.64, and the bacterial biomass showed an exponential phase of growth in 120h. The microorganisms most sensitive to the metabolic fluid were Candida albicans, with a inhibition halo of 28.2 ± 0.9, and Escherichia coli, with an inhibition halo of 27.2 \pm 0.4. These data indicate that this bacterium native to the Amazon presents itself as a source of antimicrobial substances with a varied action spectrum, and the culture data obtained will serve as a basis for the production of large-scale metabolic liquid and subsequent extraction stage of the metabolites bioactives and their chemical elucidation.

Keywords: metabolites, actinobacteria, Streptomyces, antibiotics.

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