

**Title: SELECTION OF ANTIMICROBIAL SECONDARY METABOLITES FROM ACTINOBACTERIA**

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**Abstract:**

Antibiotics are chemical, natural or synthetic compounds capable of inhibiting the growth of or eliminate infectious and parasitic agents. They are produced, mostly from the secondary metabolism of some microorganisms that carry out total or partial synthesis of the molecule recognized activity. One of the major sources of natural antibiotics are actinomycetes, gram positive bacteria belonging to the phylum *Actinobacteria*. In this study we were isolated this actinobacteria in rhizosphere soil *Aniba parviflora* (Macacaporanga) and assessed the antimicrobial potential of these strains against micro-organisms and plant pathogens of clinical interest. The isolation occurred by serial dilution of 10g rhizosphere in 90ml of phosphate buffer to obtain and seeding an aliquot of 100 µL dilutions of 10<sup>-3</sup>, 10<sup>-4</sup> and 10<sup>-5</sup> onto Petri dishes containing yeast medium Arginine agar (ALA), maintained in incubation for 21 days at 30 ° C. The isolation was carried out by assessing the macromorphological characters followed by micromorphology. The antimicrobial potential of isolated lineage was evaluated by the method of agar block against *S aureus* (MRSA), *Escherichia coli*, *Proteus mirabilis*, *Edwardsiella tarda*, *Serratia marcescens*, *Enterobacter cloacae*, *Candida species*, *Fusarium* spp and *Rhizoctonia solani*. Were isolated 25 strains of actinomycetes, named as MPO1 up to MPO25 of which were used to test the antimicrobial activity of MPO1, MPO6, MPO8, MPO10, MPO18, MPO19, MPO20, MPO23 and MPO24. Only MPO6 was not active against the tested pathogens. The MPO1 and MPO8 strains showed high intensity of inhibition against *S. marcescens*, *S. aureus* (MRSA), *Fusarium* spp and *Rhizoctonia solani*; MPO10 showed high activity for *S. aureus* (MRSA) and moderate against *S. epidermidis*; MPO18 showed high antifungal activity against *Fusarium* and *Rhizoctonia solani*; MPO19 showed high activity against *Fusarium* spp. and *Rhizoctonia solani*, moderate against *S. aureus* (MRSA) and low versus *S. saprophyticus* and MPO23 and MPO24 showed moderate activity against *S. aureus* (MRSA). The results demonstrate the potential of this actinobacteria group in the production of bioactive compounds, especially antibiotics with broad spectrum of action ranging from gram positive, gram negative bacteria, yeasts and filamentous fungi.

**Keywords:** Actinobacteria, *Aniba parviflora* (Macacaporanga), Antimicrobial Activity