

TITLE: ANTIMICROBIAL POTENTIAL OF *Vitex Megapotamica* ENDOPHYTES

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ABSTRACT

Endophytic fungi inhabit the interior of plants without causing them damage. The endophytes are recognized for producing secondary metabolites with biological activity and therefore are promising sources of compounds of pharmacological interest. The present work isolated endophytic fungi from the leaves of *Vitex megapotamica*, popularly known as Tarumã, and confronted these microorganisms with *Escherichia coli*, *Salmonella typhimurium* and *Staphylococcus saprophyticus* to evaluate the potential of production of compounds with antibacterial activity of the endophytes. It was isolated 44 fungi, of which 12 were selected by the macroscopic characteristics for the later stages of the study. The evaluation of antimicrobial potential was performed with a copy of each macromorphology. The endophyte was grown in the center of a petri dish containing potato dextrose agar. After the fungal growth reached approximately half of the plate, a stria from the edge of the colony towards the edge of the plate was seeded containing a suspension of the pathogenic microorganism with turbidity degree equivalent to the MacFarland 0.5 scale. The assays were incubated at 36 ° C for 24 h. The tests were performed in triplicate and positive results were confirmed. It was considered microbial growth inhibitor the fungus that prevented pathogen development near the edge of the colony. Eight fungi inhibited the development of *Staphylococcus saprophyticus*. None of the isolates evaluated was effective in controlling the growth of Gram-negative bacteria. The results demonstrate the potential for production of bioactive metabolites by the evaluated endophytes, requiring the continuity of the research to identify the compounds with biological activity. Among the evaluated pathogenic microorganisms, Gram-positive bacteria were more sensitive to the inhibitory effect of the fungus than Gram-negatives. The technique used for the evaluation allowed the selection of microorganisms with biotechnological potential and can be considered easy to perform and of low cost.

Keywords: fungi, *Staphylococcus saprophyticus*, bioactivity, tarumã, Gram-positive.