Prospection of endophyte microorganisms from *Bauhinia monandra* leaves with mainly identification of *Actinobacteria*

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INTRODUCTION

The microorganisms that coexist in a symbiotic way with the host plant are called endophytes, associated with the health of the plant. *Bauhinia monandra* Kurz (Fabaceae family) have been used in folk medicine as antidiabetic or antioxidant agent. There is no investigation regarding the identification of endophytic microorganisms of *B. monandra*, although some pharmacological studies with this species are reported.

OBJECTIVES

The prospection of microorganisms from *B. monandra* leaves, to identify endophytes and obtain strains with biotechnological applications.

MATERIAL AND METHODS

- *B. monandra* leaves, disinfected with hypochlorite solution, were macerated in phosphate buffered saline and seeded in ten selective culture media containing antibacterial or antifungal agents (Figure 1).

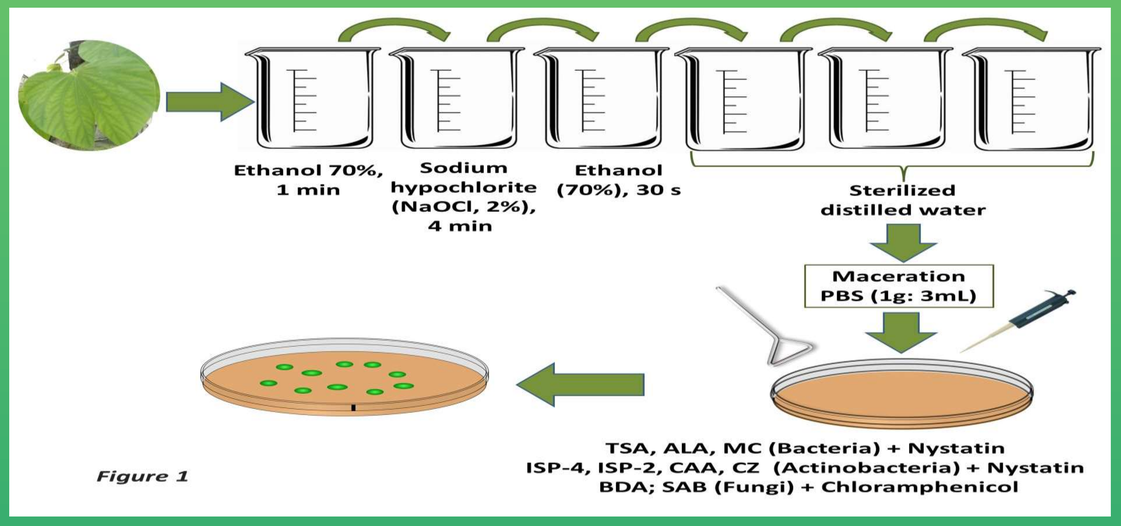
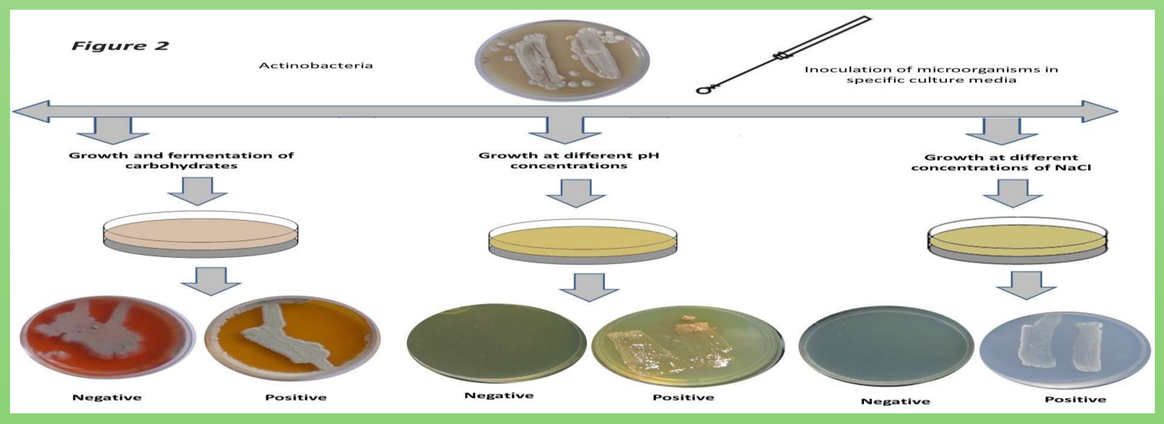


Figure 1

- The use of selective culture media to isolate endophytic microorganisms allowed obtaining non-filamentous and filamentous bacterial strains as well as fungus strains.

- The identification of *Actinobacteria* was carried out through biochemical assays using the polyphase taxonomy, which evaluated the use of carbon sources as well as coloring of the aerial mycelium (Figure 2).



RESULTS

- Relevantly is mentioned the L-arginine agar medium to non-filamentous bacterial colonies; the inorganic salts-starch agar medium to *Actinobacteria* and the potato dextrose agar medium to filamentous fungi.

- The endophytic filamentous fungus strains detected belonged to the genera *Penicillium, Curvullaria* and *Aspergillus*.

- Non-filamentous endophyte bacteria were grouped in the genera *Bacillus*, *Burkholderia* and *Enterobacter*; strains of endophytic *Actinobacteria* were classified as *Streptomyces* and *Nocardiopsis* (Figure 3).

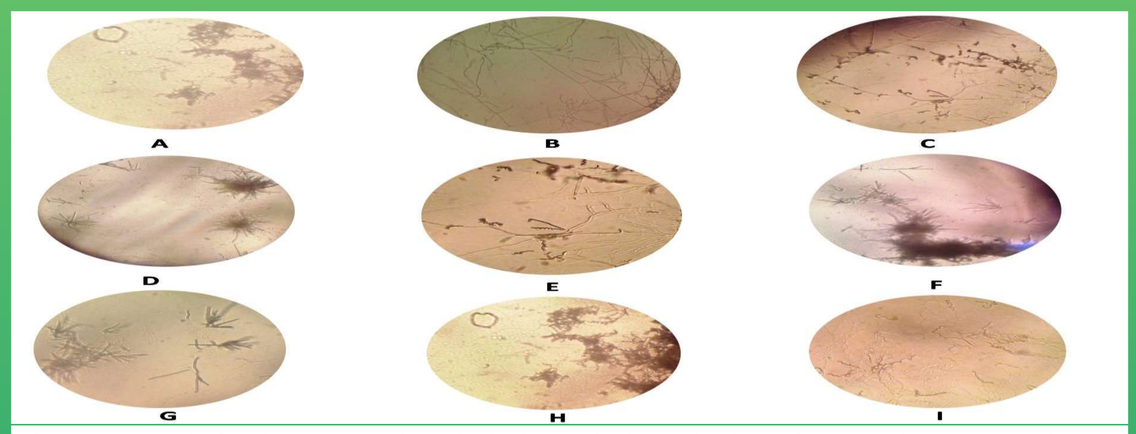


Figure 3. Optical microscopy of endophytic *Actinobacteria* from leaves of *B. monandra*. A, *Streptomyces spp*. 1F; B, *Nocardiopsis spp*. 2F; C, *Streptomyces spp*. 3F; D, *Streptomyces spp*. 4F; E, *Streptomyces spp*. 5F; F, *Streptomyces spp*. 6F; G, *Streptomyces spp*. 7F; H, *Streptomyces spp*. 8F; I, *Streptomyces spp*. 9F.

CONCLUSIONS

This work introduces the first data of identification from endophyte *Actinobacteria* in the leaves of *B. monandra*.

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CNPq Conselho Nacional de Desenvolvimento Científico e Tecnológico