

## Characterization of Cutaneous Microbiota in Frogs “*Brachycephalus ephippium* (Pumpkin Toadlet)”

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### Introduction

The microbiota it's a set of microorganisms that inhabit organs or tissues of a body<sup>1</sup>. Recent studies show that microorganisms play an important role in the development of the immune system<sup>2, 3</sup>. Several factors among them the habitat is an important component in this microbial community composition in the skin of anuran. It is necessary to characterize the local microbiota for the conservation and maintenance of species<sup>4</sup>. The *Brachycephalus ephippium* is a frog endemic to Brazil, found in forested areas of the Mantiqueira, Serra do Mar and Atlantic Forest, extending from Bahia to Paraná. This species is considered as an environmental indicator and is studied due to the presence of Tetrodotoxin (TTX) on the skin, but there are no studies on the characterization of the microbiota of this species' skin<sup>5, 6</sup>.



Figure 1 - *Brachycephalus ephippium* (Personal archive)

### Objective

To analyze and characterize the microbiota of *Brachycephalus ephippium* in order to understand their role in the development of their immune system.

### Material and methods

- Collection with swab

It was collected biological samples of five individual of *B. ephippium* from Municipal Natural Park Augusto Ruschi, first Protection Conservation Unit of Integral city São José dos Campos - São Paulo - Brazil.

- Cultivation of microorganisms

Samples were grown in McConkey Agar; Mannitol Salt Agar; Brain Heart Infusion Broth; Rugai Lysine and GBS Broth - incubated at 37°C

- Gram stain

The microorganisms in the samples were classified as belonging or not to gram positive or negative group.

### Results

The results demonstrated the presence of bacteria do not ferment lactose in MacConkey Agar; *Staphylococcus* sp. in Mannitol Agar; cocci in BHI broth; group B *Streptococcus* in GBS Broth and urease positive and sucrose in Rugai Lysine.

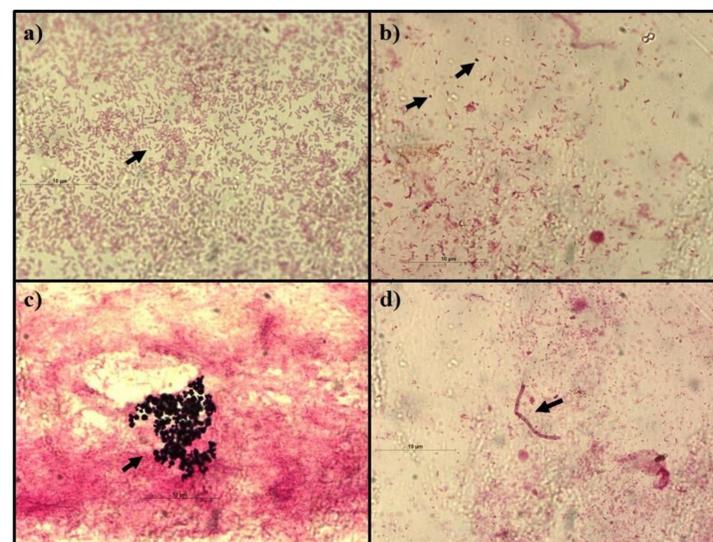


Figure 2 - Gram staining. a) Gram-negative bacteria (rods); b) Gram-positive bacteria (cocci); c) yeast-like fungus unidentified; d) hyphal.

### Conclusion

Although the species examined has a characteristic toxin production, it does not interfere or inhibit the presence of the bacterial species found, but one of the specimens showed the presence of a yeast-like fungus, this can be indicative of changes in the immune system of the animal, tests will be performed for the molecular characterization of the fungus found.

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