

ISOLATION AND MORPHOLOGICAL CHARACTERIZATION OF CYANOBACTERIA FROM ATLANTIC FOREST PHYLLOSPHERE

Theme: Metagenomics and biodiversity

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The Atlantic forest uphold as a unique environment able to sustain a rich microbial biodiversity mainly due to its particular climatic conditions. Although few studies of bacterial diversity on this unique environment exist, the cyanobacterial group is almost unknown. The aims of this study were to isolate cyanobacteria from leaf surface (phyllosphere), obtain mono-specific cultures under laboratory conditions and identify the isolates according to its morphological features. The isolates were obtained from leaf surfaces of two tree species (*Garcinia gardneriana* and *Guapira opposita*). The leaves were collected in Picinguaba and Santa Virgínia centers, located in the Parque Estadual da Serra do Mar, São Paulo. Firstly, the leaves were placed in BG-11 medium, which is specific for cyanobacteria growth, with and without a nitrogen source. The mono-specific cultures were obtained by repeatedly separation of cyanobacterial cells using a Pasteur pipette under an optical microscope. Cultured cells were maintained under a 12:12 light:dark (L:D) cycle with white fluorescent light ($30 \mu\text{mol photons.m}^2.\text{s}^{-1}$) at 25°C. The strains were identified at a family level according to specialized literature. Seventeen morphotypes were isolated and identified as belonging to four families: Phormidiaceae (2 strains), Pseudanabaenaceae (3 strains), Microchaetaceae (3 strains) and Nostocaceae (9 strains). This is the first report about the isolation and morphological characterization of cyanobacteria from phyllosphere of these tree species. The presence of N_2 fixing strains (Microchaetaceae and Nostocaceae) indicates that they contribute to the inputs of nitrogen in this ecosystem. This cultured isolates have provided a basis for future molecular and phylogenetic analyses and for bioprospection.

Keywords: epiphytic, taxonomy, Bacteria, *G. gardneriana*, *G. opposita*.

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