The cyanosphere of LEGEcc cultures

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Résumé

Cyanobacteria are a biotechnologically-relevant bacterial phylum. In culture collections worldwide, monocyanobacterial cultures are very rarely axenic. At least to some extent, this is thought to be related to the rich exopolyssacharide environment around cyanobacterial cells. The Blue Biotechnology and Ecotoxicology Culture Collection (LEGEcc), housed at CIIMAR - University of Porto, is one of the largest collections of cyanobacterial cultures. We have sequenced the genomes of a selected, diverse set of > 100 of these cyanobacteria. However, due to the non-axenicity of the cultures, we actually obtained metagenomic data for each culture. This provided an opportuinity to study the cyanosphere of cyanobacteria cultures, and to explore trends in the diversity of heterotrophic bacteria associated with cyanobacteria. We report here our main findings regarding the distribution, diversity of cyanobacteria-associated heterotrophs, namely the dominance of Bacteroidota and Pseudomonadota, and highlight some genus-specific associations that might hold clues to the ecology of cyanobacteria in their natural setting.

Mots-Clés: cyanosphere, cyanobacteria, culture collections, metagenomics

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