



26 **LEGE Culture Collection and its cyanobacterial diversity: strains data survey analysis highlights the increasing importance of this biological resource**

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The Blue Biotechnology and Ecotoxicology group (CIIMAR, University of Porto) has undertaken a process of organizing its cyanobacterial isolates by creating a culture collection. This led to the recently membership of LEGE CC in the World Federation for Culture Collections (WFCC). The collection is also part of the Research Infrastructure EMBRC.PT. At present it comprises more than 350 different cyanobacterial strains, several of them unique among the (phylogenetic) diversity of the group. These isolates have been obtained since 1991, from samples collected in different environments and locations mainly in Portugal (including Madeira and Azores Islands), but also elsewhere (e.g. Australia, Brazil, Colombia, Morocco, Mexico). As in other collections worldwide, LEGE CC seeks to provide starter cultures for a diverse range of aims (R&D, science education & dissemination). In fact, this has been done with local, national and international entities, under different types of partnerships. Several studies, most of them from BBE group's own research, have shown the potential or the effective capacity of different LEGE strains to produce a myriad of chemical compounds, including toxins or newly discovered bioactive molecules. Soon, a number of strains (at least three) will have their genomes sequenced and annotated. Others studies revealed that some strains are phylogenetically distinct, and thus taxonomic challenging.

In this work, while presenting the Culture Collection, the main findings from a survey of published and unpublished data available on the total LEGE strains are given. Results from this meta-analysis are summarized and presented in a systematic manner, linking the phylogenetic placement of our strains in the "cyanobacterial Tree of Life" (based on 16S rRNA gene sequences), along with relevant information retrieved from the data compilation process (i.e. morphological features and identification, geographic and ecological origin, ecophysiological data, toxicity and bioactivity (bioassays, molecular, analytical) analyses performed; production/type of secondary metabolite, publications, year of publication, etc.). It is believed that connecting the phylogeny of each LEGE strain to the aforementioned data creates awareness and capture interest of the scientific community and of members of the general public, such as pharmaceutical and biotechnological enterprises. Finally, the online version (currently under construction) of the collection (www.ciimar.up.pt/legculturecollection) is presented.