The BCCM/ULC collection : a Biological Ressource Center for polar cyanobacteria

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In Polar Regions, Cyanobacteria represent the key primary producers and the main drivers of the food webs in a wide range of aquatic to terrestrial habitats. For example, they build benthic microbial mats in lakes and soil crusts in terrestrial biotopes. They have adapted to their environment, and may present interesting features to survive freeze/thaw cycles, seasonally contrasted light intensities, high UV radiations, dessication and other stresses.

The BCCM/ULC public collection funded by the Belgian Science Policy Office since 2011 aims to gather a representative portion of the polar cyanobacterial diversity with different ecological origins (limnetic microbial mats, soil crusts, cryoconites, endoliths, etc.). It makes it available for researchers to study the taxonomy, evolution, adaptations to harsh environmental conditions, and genomic make-up. It presently includes 200 cyanobacterial strains, with 118 being of polar origin (catalogue: http://bccm.belspo.be/catalogues/ulc-catalogue-search).

The morphological identification shows that the strains belong to the orders Synechococcales, Oscillatoriales, Pleurocapsales, Chroococcidiopsidales and Nostocales.

We present here the molecular datasets showing the diversity of the BCCM/ULC strains, studied on the basis of the 16S rRNA gene and the ITS sequences. A selection of strains was also characterized by sequencing of *rpoC1*, *recA*, and *gyrA* genes after amplification with newly designed primers.

Our results mainly show the divergence of some Antarctic strains from related strains isolated from other regions. It suggests that a portion of the Antarctic cyanobacterial flora may have evolved independently from the cyanobacteria in other continents, as previously proposed by Strunecky et al. (FEMS ME 2012).