ABSTRACT

TOXIC CYANOBACTERIA IN THE DEEP LAKES SOUTH OF THE ALPS: A MOLECULAR ASSESSMENT ON CYANOTOXIN PRODUCING GENOTYPES

Cyanobacteria produce a wide range of toxins, including hepatotoxins (e.g., microcystins, MCs) and neurotoxins (e.g., anatoxins, ATXs). They represent a serious health hazard, particularly during bloom formation. Despite the economic and natural importance of the largest lakes south of the Alps (Garda, Iseo, Como, Maggiore, v.i. 122 km²) and new documented blooms forming cyanobacterial toxications (Glocochaeteceum lenaeaxei), systematic studies on the molecular taxonomy and toxicological characterization of cyanobacterial strains in this lake district began only very recently. In this contribution, we will report the preliminary results of a wide survey carried out in selected southern subalpine lakes, with the aim to characterize the toxic cyanobacterial genotypes (including MCs and ATX-tox producers). The analyses are based on taxonomical, genetic and metabolomics determinations carried out on environmental samples and isolated strain cultures. The results are beginning to fill in the picture about the distribution of the dominant toxic species in one of the most important lake districts in Europe. In perspective, these studies will be supplemented by metagenomic analysis, allowing obtaining a clearer picture of cyanobacterial diversity and potential toxin producers.

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DETAILS

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