



Abstract

Novel Toxicity Aspects of Cyanotoxins †

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Abstract: The occurrence of toxic cyanobacteria and their cyanotoxins production are increasing phenomena reported worldwide. Cyanotoxins, secondary metabolites of different cyanobacterial species, are considered a potential hazard that can become a risk for human and environmental health after exposure. Global changes (rising temperatures, eutrophication due to human activities, etc.) favour their appearance leading to increased exposures and, consequently, risks. In order to avoid their negative impacts, the World Health Organization has established provisional drinking-water and recreational-water guideline values, and different countries have implemented limits in their regulations. However, these limits are not enough taking into account the increasing number of known cyanotoxins. Also, the establishment of these legal limits is hampered by the gaps in the knowledge of their toxicological profiles. Thus, this work aimed to establish the state of the art on the human toxicity of cyanotoxins (mainly microcystins, cylindrospermopsin and anatoxin-A) and to shed light on aspects not completely elucidated, such as target organ toxicity, immunotoxicity or genotoxicity.

Keywords: cyanotoxins; cylindrospermopsin; microcystins; anatoxin-A; toxicity; risks



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