

- Presentation sheet :

UMR CNRS 6023 Laboratoire Microorganismes : Génome et Environnement, Clermont Université (D. Debroas)

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Syntrophic relationships within the cyanosphere in aquatic ecosystems under strong physicochemical constraints

Bacterial populations associated with cyanobacteria are often specific and play a determining role in the dynamics of cyanobacterial blooms in both lotic and planktonic ecosystems. Cyanobacteria are known for their abundant and varied production of secondary metabolites, some of which are toxic (cyanotoxins). These particular metabolites can generate the presence of specific bacteria capable of degrading and/or using them. Thus, the dominance of cyanobacteria in an environment certainly modifies the ecological equilibrium at the microbial level with potential consequences at the ecosystem level that still remains unknown. This project aims to evaluate by *in situ* approaches (environments with physico-chemical constraints (natural radioactivity, strong thermal amplitudes, strong mineralization...), hydrodynamics, various, both in pelagic and benthic environments) and *in vitro* 1) the importance of chemotrophic prokaryotes/cyanobacteria interactions on the dynamics of cyanobacteria blooms and the production of specific metabolites including cyanotoxins 2) the influence of abiotic factors on these relationships and more globally on the functioning of ecosystems.

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