Development of an HPLC-PDA Method for Microcystins Analysis in Lithuanian Water Bodies

Tri Kaloudis[1], Jurate Karosiene[2], Judita Koreiviene[2]

[1]AquOmixLab, EYDAP SA, Athens, Greece
[2]Algology & Microbial Ecology Lab, Nature Research Centre, Vilnius, Lithuania
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1. The Challenge: A Gap in Monitoring Capability

Previously, the assessment of harmful microcystins in Lithuanian water bodies relied on the **ELISA method**. This method cannot quantify individual MC congeners.

2. Objectives

The primary goals of this STSM were to:

a. Develop an **HPLC-UV (PDA)** method for the analysis of 6 common MCs and nodularin.
b. Develop a **SOP** that fulfills the criteria for ISO 17025 laboratory accreditation.
c. Provide **hands-on training** to the laboratory personnel.
d. Establish **a long-term collaboration** between the Greek and Lithuanian research groups.

3. Methods and activities

a. Method development and optimization
b. Calibration & quantitation.
c. Protocol (SOP) & HPLC Training Workshop.
d. Sample Exchange for future collaboration.





4. Capacity Building & Public Health Impact

The host institution is now trained to perform its own microcystins analysis. This will improve the **effectiveness of risk assessment** and enable a **rapid response** to harmful cyanobacteria blooms, safeguarding public and ecosystems health.

5. Future Collaboration & Outlook

This mission successfully laid the groundwork for an enduring scientific partnership for:

a. **Cross-Validation** studies (HPLC-UV vs LC-MS).
b. Joint research to investigate the broader **cyanobacteria metabolome** in Lithuanian lakes.

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