Resource Summary Report

Generated by dkNET on Sep 12, 2026

River biofilms sampling for both downstream DNA analysis and microscopic counts

DOI:10.17504/protocols.io.ben6jdhe
Type: Protocol

Proper Citation

Frederic Rimet, Marine Vautier, Rainer Kurmayer, Nico Salmaso, Camilla Capelli, Agnès Bouchez, Peter Hufnagl, Isabelle Domaizon 2020. River biofilms sampling for both downstream DNA analysis and microscopic counts. protocols.io dx.doi.org/10.17504/protocols.io.ben6jdhe

Protocol Information

URL: https://dx.doi.org/10.17504/protocols.io.ben6jdhe

Authors: Frederic Rimet, Marine Vautier, Rainer Kurmayer, Nico Salmaso, Camilla Capelli, Agnès Bouchez, Peter Hufnagl, Isabelle Domaizon

Group: EcoALpsWater

Summary: The objective of this protocol is to provide a reliable and replicable method for the sampling of river micro-phytobenthos and associated microbes in biofilms, to be used in both downstream DNA analysis and algal microscopic counts. .justify:after { content: ""; display:inline-block; width: 100%; } The filed protocol is optimized for routine sampling and is in agreement with CEN guidance (NF EN 13946) and CEN technical report (CEN/TR 17245) for the analysis of benthic diatoms from rivers and lakes. .justify:after { content: ""; display:inline-block; width: 100%; } The application proposed here in the context of EcoAlpsWater aims in comparing DNA inventories to traditional inventories (microscopy). .justify:after { content: ""; display:inline-block; width: 100%; } This protocol is part of the deliverables provided by the WP1 of the Eco-AlpsWater project. All members of the EcoAlpsWater consortium (involving 12 partners : http://www.alpine-space.eu/projects/eco-alpswater/en/home) have contributed to the optimization of this protocol. .justify:after { content: ""; display:inline-block; width: 100%; } .justify:after { content: ""; display:inline-block; width: 100%; } Phytobenthos-based ecological assessment of running waters is part of the EU Water Framework Directive 2000/60/EC (European Commission) allowing to evaluate the level of nutrients and organic matter pollution in rivers. According to the countries, phytobenthos assessment includes all groups of algae or is based only on diatoms communities. Other periphytic organisms such as fungi, bacteria or microbial eukaryotes as cilates or planktonic (metaphytic) algae are not considered in this assessment method. Further the group of charophytes is

covered by the macrophyte ecology method assessment. .justify:after { content: ""; display:inline-block; width: 100%; } The recent development of DNA metabarcoding has the potential to complement the traditional biological monitoring based on the direct observation of the organisms, both by reducing sample-processing cost and time and by offering the opportunity to consider a larger taxonomic diversity (e.g. bacteria, heterotrophic micro-eukaryotes …). .justify:after { content: ""; display:inline-block; width: 100%; } The protocol described here is dedicated to the sampling of biofilms in rivers both for microscopic enumeration of the phytobenthic community and for downstream DNA analyses of microbial assemblages. .justify:after { content: ""; display:inline-block; width: 100%; } This field protocol is based on routine methods used for biofilms sampling and is in agreement with: .justify:after { content: ""; display:inline-block; width: 100%; } - CEN, 2014. Water quality - NF EN 13946 - Guidance for the routine sampling and preparation of benthic diatoms from rivers and lakes. Afnor, 1-23. .justify:after { content: ""; display:inline-block; width: 100%; } - CEN 2018. Water quality - CEN/TR 17245 - Technical report for the routine sampling of benthic diatoms from rivers and lakes adapted for metabarcoding analyses. CEN, 1-8. .justify:after { content: ""; display:inline-block; width: 100%; }

Affiliations: INRAE, CARRTEL, Pole R&D ECLA, 74200 Thonon les bains, France, INRAE, CARRTEL, Pole R&D ECLA, 74200 Thonon les bains, France, University of Innsbruck, Research Dep. for Limnology, Innsbruck, Austria , Edmund Mach Foundation, San Michele all'Adige, Trento, Italy , University of Applied Sciences Southern Switzerland, SUPSI, Cannobio, Switzerland , INRAE, CARRTEL, Pole R&D ECLA, 74200 Thonon les bains, France, Austrian Agency for Health and Food Safety Ltd.(AGES), Austria, INRAE, CARRTEL, Pole R&D ECLA, 74200 Thonon les bains, France

Version: 1

Publication Date: 2020

Proper Citation: Frederic Rimet, Marine Vautier, Rainer Kurmayer, Nico Salmaso, Camilla Capelli, Agnès Bouchez, Peter Hufnagl, Isabelle Domaizon 2020. River biofilms sampling for both downstream DNA analysis and microscopic counts. protocols.io dx.doi.org/10.17504/protocols.io.ben6jdhe

Record Creation Time: 20210329T220534+0000

Record Last Update: 20210329T221022+0000

Data and Source Information

Source: