

## **TRAINING SCHOOL ON BIOMARKERS IN FRESHWATER BIVALVES**

**CONFREMUS** - Conservation of freshwater mussels: a pan-European approach COST CA18239

**Place:** Department of Biosciences University of Milan, Milan Italy

**Date:** 7-9th February 2022

**Local organizer:** Camilla Della Torre (University of Milan, Italy)

**Trainers:** Nicoletta Riccardi (CNR Institute of Water Research – Verbania, Italy), Camilla Della Torre (University of Milan, Italy), Teresa Balbi (University of Genoa, Italy)

**Aim:** Freshwater bivalves are considered valuable biological models to investigate the presence and potential impacts of anthropogenic contaminants in aquatic ecosystems. Previous ecotoxicological and ecological studies revealed that environmental pollution can compromise the health of native bivalve populations. Biomarkers, including the expression of specific proteins and certain behavioural patterns, have proven effective in providing information on the condition of natural populations of freshwater bivalves and can be used as early warning tools for e.g. environmental pollution events. The objective of this training school is to provide training in the biomarkers approach at different levels of biological complexity, from proteins to entire organism.

**Skills gained:** Participants will acquire skills in analytical methodologies that can subsequently be applied to assess the health status of freshwater bivalves. Specifically, trainees will be trained in quantifying following biomarkers: i) activity of ABC transport proteins which represent the first line of defense towards exogenous toxic molecules (pollutants, toxins); ii) non-invasive biomarkers, including immunological and cellular markers of stress in hemocytes lysosomal membrane stability, nitric oxide content and phagocytosis activity; iii) the content of glycogen, which is a marker of metabolic function; and iv) valvometry.

## What to bring:

Suitable clothing for lab work

COVID-19 documentation complying with the updated legislations, which are in effect at the time of the event + face-mask

For international arrivals please check Italian government website for recent updates about to and from Italy.

<https://www.salute.gov.it/portale/nuovocoronavirus/dettaglioContenutiNuovoCoronavirus.jsp?lingua=english&id=5412&area=nuovoCoronavirus&menu=vuoto>

**All necessary travel arrangements (flight tickets, accommodation etc.) need to be booked with a covid insurance/possible cancellation. The COST funds cannot reimburse the expenses in case the Covid policy makes it impossible for participants to attend.**

**Registration and contact:** [Camilla.dellatorre@unimi.it](mailto:Camilla.dellatorre@unimi.it)

**Registration deadline:** 27<sup>th</sup> December 2021

**PLEASE DO NOT BOOK ANY FLIGHTS AND HOTELS UNTILL YOU WILL RECEIVE FORMAL INVITATION FROM e-COST SYSTEM!**