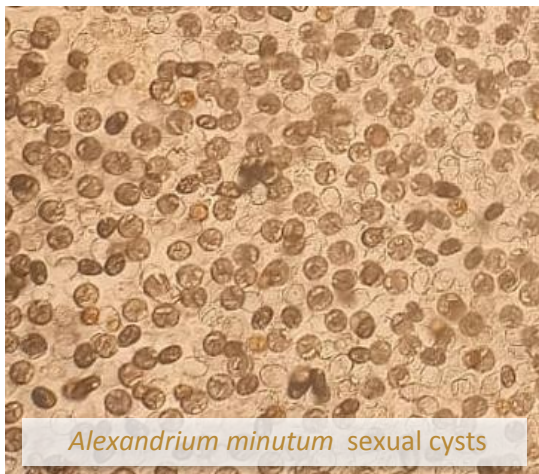


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Research Area: 2.12. Upwelling of toxic algae and marine biotoxins



Collecting samples from Niskin bottle



Alexandrium minutum sexual cysts

PhD project: **Analyses of sexuality and toxicity inheritance in *Alexandrium minutum***

Supervisors: Dr. Rosa Isabel Figueroa Pérez (Spanish Oceanographic Institute IEO-CSIC) Dr. Alfredo De Bustos Rodríguez (University of Alcalá UAH)

Summary: This thesis circumscribes the dinoflagellate *Alexandrium minutum*, a microalgae responsible for Paralytic Shellfish Poisoning (PSP) in Western Europe. In order to effectively prevent any detrimental effect on human health, the study of the interaction between biological (life cycles) and environmental factors is key to explain the variability in virulence (toxicity) of this species blooms. Under actual climate trends, it is also essential to understand how changes in temperature, salinity and irradiance influence the proliferation rate and toxicity of the blooms. In this context, the main objectives of this thesis are to study the link between environmental factors related to climate change with cellular physiology and toxicity, the characterization of genes involved in toxicity (STX) and sexual reproduction, and finally, the relationship between sexuality and STX toxicity.

The experiments are carried out with cultured strains from CCVIEO Culture Collection of Microalgae from the Oceanographic Centre of Vigo (IEO-CSIC). The toxicity and genetic analyses are realized due to the collaboration with Institute of Marine Research (IIM-CSIC) and UAH. This thesis is possible thanks to the economic support of DIANAS project (CTM2017-86066-R) and GAIN grant (GRC-VGOHAB IN607A-2019/04).

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