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Nationality: Spanish

Orientation: Sustainable use of Marine Resources
Specialization Area: Aquaculture
Research Area: 2.15 Genetics and genomics applied to aquaculture.

PhD project: **Study of immune system through a transcriptomic, proteomic and morphological approach in bivalve molluscs of commercial interest in Galicia**

Supervisors: Dr. Ángel Pérez Díz (Universidade de Vigo)
Dr. Antonio Figueras Huerta (CSIC)

Summary: Aquaculture is defined as any activity that is related to the development, growth, commercialization and production of aquatic organisms. Regarding production, it is of special interest to understand the immune response of organisms of commercial interest, such as bivalve molluscs, to understand how they resist the diseases they present. In this sense, this doctoral thesis aims to increase the transcriptomic and proteomic knowledge of the immune response of these organisms. For this, samples of hemolymph, mucus and intervalvar fluid will be analyzed to deepen their involvement in the immune response and in the recognition of potential pathogens.
In addition, 3 selected species will be compared: Mytilus galloprovincialis, Cerastoderma edule and Ruditapes decussatus, that will allow an analysis of their immune response and, in this way, they will try to explain the different susceptibilities to infections shown by these three organisms. This study will also deepen the study of the defense mechanisms of these organisms in order to characterize bioactive molecules such as those already described for mussels and that show activity against mollusc, fish and human viruses, bactericidal activity, as well as wound regeneration properties.