

Pathogens and immune response of common octopus, *Octopus vulgaris*

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The common octopus *Octopus vulgaris* is one of the most important cephalopod species in worldwide fisheries, and it is considered one of the most important alternative resources to diversify the aquaculture. At present wild-captured octopus are on-growing in floating cages in a semi-open system. One of the main constrains in the aquaculture is the animal health. The high density of the stocks together with the operating procedures, cause stress that increase the development of infectious diseases. Therefore, one of our objectives is to identify pathogens and to study the produced diseases. In order to control and eradicate the main diseases, it is important to develop studies focused on knowing the octopus immune response against pathogens. Those studies will allow us to establish the bases for developing strategies towards an appropriate sanitary practice in octopus aquaculture. Functional immune-related studies developed by hemocytes, the main functional effector cells of the immune response, allow us to understand how cephalopods fight against external aggressors. Furthermore, the identification of genes involved in immune response, and the study of its expression patterns (at transcriptomic and proteomic level), contributes to establish the molecular bases to identify and select octopus resistant against the main diseases, such as coccidiosis.