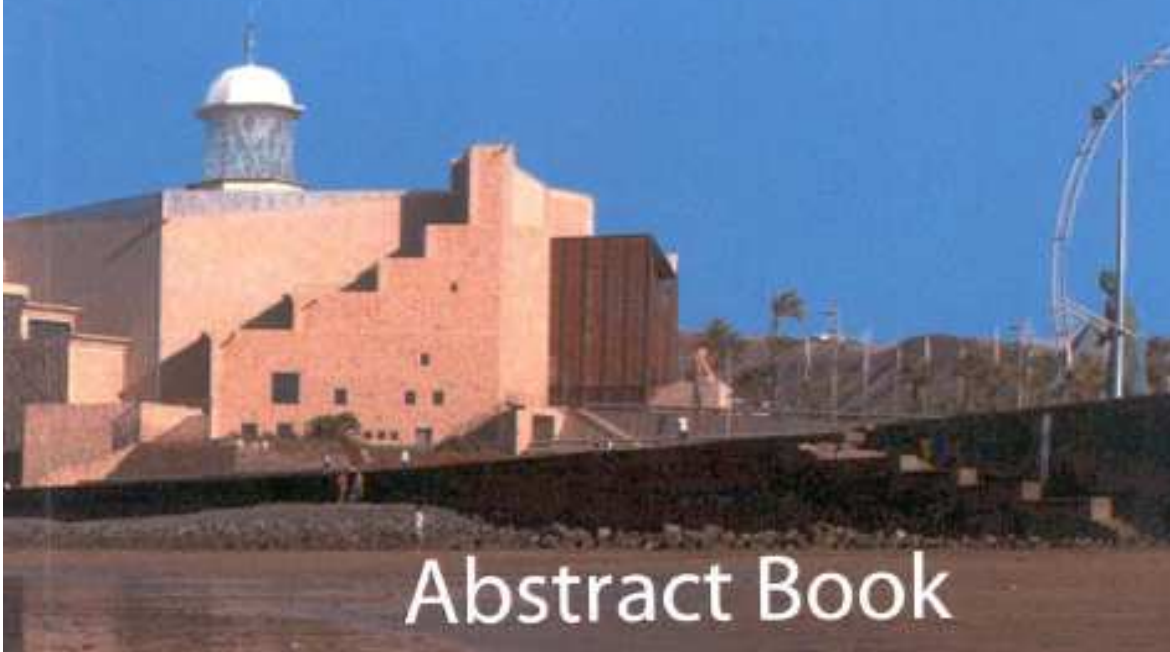




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DNA VACCINATION OF BROODSTOCK SPECIMENS MODIFIES THE IMMUNE STATUS OF THEIR PROGENY

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Transfer of maternal immunity is a term attributed to the immune factors transferred from mother to offspring in order to protect the progeny, while their own immune response is still undeveloped. This kind of transfer has been described in vertebrates, including fish. In teleost fish, it has been reported that a maternally-derived immunoglobulin (IgM) is contained in the oocytes, eggs and/or larvae together with other non-specific immune factors such as complement factors, lectins and lysozyme. This transferred immunity gradually declines with time, however, the control of this process could lead to develop specific maternal vaccination against eggs and larvae pathogens and vertically transmitted virus. Nodavirus (VNNV), a demonstrated vertical transmitted virus, causes the viral encephalopathy and retinopathy (VER) disease, particularly in European sea bass larvae and juveniles, provoking high mortality rates. Although viral diseases are responsible for many economic losses in modern aquaculture producing high mortalities, they have no effective antiviral treatments available yet. In this study we intramuscularly injected an experimental DNA vaccine against VNNV to five female broodstock specimens and studied the improvement of the immune system status at functional and gene expression levels in the eggs and larvae of their progeny with the aim of determining whether the vaccine can provide a higher status of immunity to the offspring. Our data determined some improvement, however further characterization of the mechanism involved in the transfer of maternal immunity in fish are needed.

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