Research program IZS VE 09/15

Emerging Viral Encephalopathy and Retinopathy in sea bream (Sparus aurata) in the Mediterranean sea: pathogenesis, immunological response and diagnosis.

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Betanodavirus is the causative agent of Viral Encephalopathy and Retinopathy (VER), a severe infectious disease affecting a number of economically relevant fish species. Gilthead sea bream (*Sparus aurata*) has been generally believed to be resistant, as VER clinical signs in this species have never been reported so far. Nevertheless, sea bream appears to be susceptible to experimental infection and act as a contagious host for other species when farmed together.
An increasing number of VER outbreaks in sea bream hatcheries with high mortality has recently been reported. Isolated betanodaviruses affecting sea bream were characterized as reassortants RGNNV/SJNNV, whose emergence in the Mediterranean has only recently been reported. Limited knowledge is available on VER pathogenesis in sea bream, and none regarding the reassortant strain infection in this species. Such information are crucial for developing efficacious control strategies.

The proposed project aims to investigate:

1) the impact of the disease in RGNNV/SJNNV experimentally challenged sea bream larvae
2) the pathogenesis of VER and the kinetics of viral genes transcription levels at different stages of infection
3) the expression levels of genes relevant for immunological response of sea bream against VER during the early phase of infection.