

COURSE OF INFECTION WITH LYMPHOCYSTIS DISEASE VIRUS IN GILTHEAD SEABREAM (*SPARUS AURATA*)

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Lymphocystis disease virus (LCDV) is the etiological agent of lymphocystis disease (LCD), a pathology that affects a wide variety of fish species. Data about LCDV pathogenesis are very short, and mainly limited to histopathological studies of skin lesions. Recent studies on viral genome detection (both by PCR or DNA-DNA *in situ* hybridization) suggest that LCDV establish a systemic and persistent infection in gilthead seabream (*Sparus aurata*), but further studies are necessary to prove if this infection is productive or not.

In the present study viral quantification and viral mRNA detection (by qPCR and RT-qPCR) have been used to investigate LCDV multiplication in different organs of juvenile gilthead seabream. In addition, a histopathological study was carried out. Animals were collected from two commercial farms in Southwestern Spain. In one farm, where no LCD outbreaks have been recorded, apparently healthy fish were collected, whereas in the other farm, diseased and recovered (two months after LCD symptoms disappearance) fish were sampled. All the animals were LCDV-infected, and viral gene expression was detected in every organ analysed (caudal fin, intestine, liver, spleen, kidney and brain). In asymptomatic animals, both apparently healthy and recovered, a low-titre infection was observed, with the highest viral copy numbers detected in brain and kidney. In diseased fish, viral loads were significantly higher than in subclinical infected animals, being maximal in caudal fin, where lymphocysts were present in the dermis. Different histological alterations were observed in the internal organs from diseased fish analysed, although no hypertrophied cells were detected in any of them. In recovered fish, most of the organs examined presented similar histological features to those in healthy animals. Thus, pathological changes were only detected in the intestine and liver, although they were less severe than those observed in diseased fish. The results presented showed that LCDV establishes a systemic infection in juvenile gilthead seabream, which can be subclinical. In addition, although the disease is self-limiting, the virus is not removed after disease recovery, but produces a persistent infection.

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