

69. Beneficial effects of probionts in marine fish larvae and their modes of action.

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The use of antibiotics in aquaculture has resulted in antibiotic resistance, involving environmental and human health risks. The use of beneficial bacteria or probionts might be an effective alternative in disease prevention and production enhancement. The use of probionts in aquaculture is popular as a numerous amount of scientific studies have reported improved survival and growth of fish larvae when supplied with probionts. However, there is a lack of knowledge on the modes of action of probionts and their interaction with the aquatic host. Understanding the mechanisms of action is of paramount importance to utilize the right probiotic strain to prevent specific diseases. As such aquaculture production will be improved and the side-effects associated with the use of antibiotics reduced. The objective of this study is twofold. First, we will select and optimize probiotic isolates. The potential probiotics will be cultured from healthy larvae and adult fish. The predictive screening tools used to assess probiotic potential will be: 1) the ability to adhere and colonize the fish intestine; 2) the ability to suppress the growth of several important marine fish pathogens and 3) a lack of invasiveness or toxicity. Secondly, we will unravel the modes of action of the probionts, selected in the first objective, with a focus on disease resistance in the host organisms, applying innovative techniques e.g. gnotobiotic larval model systems, immune priming and laser capture microdissection. Sea bass (*Dicentrarchus labrax*), the major marine fish cultured in southern Europe, will be employed as a model for marine fish.

70. Morphological and morphometric analyses of the suspensory ligament in Standardbreds.

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Ultrasound techniques allow examination of some parts of the suspensory ligament (SL) but "anomalies" are regularly observed. Their significance is not known. Few studies have described the relationship between ultrasonographic appearance and the exact morphology in histological sections. The aim of this study is to develop good techniques for cutting, staining, and showing the variation in the tissue composition within the SL. The SLs from the right limbs of 11 horses were collected. Samples were taken from cross-sections at six levels of the SL and they were embedded in paraffin or in Tissue-Tek®. Most of the paraffin sections were shredded. By using the cryosection technique, some freezing artifacts (holes) appeared. Therefore, a technique of freezing with cryoprotection was carried out, which produced the best results. Hematoxylin-phloxine-saffron gives a good contrast of colors between the tissues observed allowing the use of an image analysis program. The percentage of each tissue within the SL for each section and for six levels of the ligament was calculated. Results were analyzed by SAS software. The muscle tissue (PMT) and adipose tissue (PAT) decreased significantly ($p < 0.0001$), whereas the connective tissue (PCT) increased significantly ($p < 0.0001$) with age and when descending from the proximal to the distal level of the SL. The PMT was significantly higher ($p < 0.0001$) in females than males, while the PCT was significantly higher ($p < 0.0001$) in males than females. The PAT was significantly higher ($p = 0.0278$) in hindlimbs than in forelimbs.