

Targeting PKD: DNA vaccine trials based on host specific expression

Marc Faber, Chris Secombes and Jason Holland

Scottish Fish Immunology Research Centre, School of Biological Sciences, University of Aberdeen.

Proliferative kidney disease, caused by the myxozoan parasite *Tetracapsuloides bryosalmonae*, is a major disease issue for farmed rainbow trout in the UK. To combat the infection, rainbow trout farms undertake exposure programs, with surviving fish becoming immune to the disease. To combat this bottleneck in production, we generated DNA-vaccines based on *in silico* selected *T. bryosalmonae* genes that exhibit a fish-specific expression profile relative to the invertebrate host. Fish were vaccinated on a disease free hatchery prior to transfer to a farm enzootic for PKD. Apparent protective efficacy was assessed during the onset of advanced clinical disease. Here we present the first results of *in-silico* based selection, RT-PCR verified host specificity, and field testing of DNA-vaccines against a myxozoan parasite affecting rainbow trout aquaculture.