

IPN RECOMBINANT VACCINES

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IPN has allegedly been responsible for high (30%) mortalities in post-smolt Atlantic salmon in Norway and Shetland but experimental infection of fish with the IPN virus isolated from these outbreaks has failed to induce any signs of disease. However, one Norwegian group has claimed to induce IPNV-related mortality but the conditions have not been published.

Vaccination efficacy trials have been based on the ability of vaccinated fish to clear the virus after challenge. Two recombinant IPNV proteins have been expressed in different systems: The IPN VP3 protein and a truncated form of the VP2 protein were expressed in *E. coli*, the yeast *Pichia pastoris*, the fish cell line Chinook salmon Embryo Cells(CHSE), and the mammalian cell line Chinese Ovary cells(CHO). Fish were immunised with 100ug antigen in Montanide adjuvant by ip injection. Fish were blood sampled 8-14 weeks later and then challenged by ip injection of IPNV. Three and 10 weeks after challenge fish were sampled for serum antibody (ELISA and virus neutralisation) and kidney (for presence of culturable virus).

All vaccines induced anti-IPNV antibodies detectable by ELISA. The *E.coli* – expressed antigens did not induce virus neutralising antibodies (the other antisera have not yet been tested in this assay). Three weeks following challenge, the *E.coli* – immunised fish showed a marked increase in antibody titres (by ELISA) and this antisera was now able to neutralise the virus (other

antisera have not yet been tested). Sera from control fish was negative for antibody by both assays, both before and after challenge.

Following challenge, IPNV was isolated from some individuals in all groups of fish (n=10) except the group immunised with the yeast recombinant VP2 vaccine. This antigen also appeared to be the most immunogenic in that it induced antibody responses in a higher proportion of fish than the other test vaccines.

