Accepted Manuscript

Atlantic salmon adapted to seawater for 9 weeks develop a robust immune response to salmonid alphavirus upon bath challenge

L.J. Moore, J. Jarungsriapisit, T.O. Nilsen, S. Stefansson, G.L. Taranger, C.J. Secombes, H.C. Morton, S. Patel

PII: S1050-4648(17)30757-X

DOI: 10.1016/j.fsi.2017.12.017

Reference: YFSIM 5002

To appear in: *Fish and Shellfish Immunology*

Received Date: 2 November 2017

Revised Date: 9 December 2017

Accepted Date: 11 December 2017

Please cite this article as: Moore LJ, Jarungsriapisit J, Nilsen TO, Stefansson S, Taranger GL, Secombes CJ, Morton HC, Patel S, Atlantic salmon adapted to seawater for 9 weeks develop a robust immune response to salmonid alphavirus upon bath challenge, *Fish and Shellfish Immunology* (2018), doi: 10.1016/j.fsi.2017.12.017.

Atlantic salmon adapted to seawater for 9 weeks develop a robust immune response to salmonid alphavirus upon bath challenge.

L. J. Moore[1], J. Jarungsriapisit[1,3], T. O. Nilsen[2], S. Stefansson[3], G. L. Taranger[1], C. J. Secombes[4], H. C. Morton[1] and S. Patel[1*]

[1] Institute of Marine Research, P.O. Box 1870, Nordnes, 5817 Bergen, Norway

[2] Uni Research Environment, Uni Research, Thormøhlensgt. 49B 5006 Bergen, Norway

[3] Department of Biology, University of Bergen, P.O. Box 7803, 5020 Bergen, Norway

[4]Scottish Fish Immunology Research Centre, University of Aberdeen, Zoology Building, Tillydrone Avenue, Aberdeen AB24 2TZ, Scotland, UK

*corresponding author

Keywords

Salmo salar, salmonid alphavirus, inflammation, gene transcription, bath immersion, smoltification, seawater transfer, post-smolt; SAV.

Abstract

Pancreas disease (PD) caused by salmonid alphavirus (SAV) is the most serious viral disease in Norwegian aquaculture. Study of the immune response to SAV will aid preventative measures including vaccine development. The innate immune response was studied in Atlantic salmon infected by either bath immersion (BI) or by intra-muscular (*i.m.*) injection (IM) with SAV subtype 3, two and nine weeks after seawater transfer (Phases A and B respectively). Phase A results have been previously published (Moore et al. 2017) and Phase B results are presented here together with a comparison of results achieved in Phase A. There was a rapid accumulation of infected fish in the IM-B (IM Phase B) group and all fish