

Transcriptomic analysis of spleen infected with infectious salmon anemia virus reveals distinct pattern of viral replication on resistant and susceptible Atlantic salmon (*Salmo salar*)

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© 2017 Elsevier Ltd The infectious salmon anemia virus (ISAv) produces a systemic infection in salmonids, causing large losses in salmon production. However, little is known regarding the mechanisms exerting disease resistance. In this paper, we perform an RNA-seq analysis in Atlantic salmon challenged with ISAv (using individuals coming from families that were highly susceptible or highly resistant to ISAv infection). We evaluated the differential expression of both host and ISAv genes in a target organ for the virus, i.e. the spleen. The results showed differential expression of host genes related to response to stress, immune response and protein folding (genes such as; *atf3*, *mhc*, *mx1-3*, *cd276*, *cd2*, *cocs1*, *c7*, *il10*, *il10rb*, *il13ra2*, *ubl-1*, *ifng*, *ifngr1*, *hivep2*, *sigle14* and *sigle5*). An increased protein processing activity was found in susceptible fish, which generates a subsequent unfolded protein response. We observed extreme differences in the expression of viral segments between s