



European Union Reference Laboratory for Fish Diseases
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Scientific Opinion on infectious salmon anaemia (ISA)
EFSA Panel on Animal Health and Welfare (AHAW)
European Food Safety Authority (EFSA), Parma, Italy

Presented by Niels Jørgen Olesen

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European Food Safety Authority

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SCIENTIFIC OPINION

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Summary

- Following a request from the European Commission, the EFSA was asked to deliver a scientific opinion on ISA.
- The opinion reviews the available scientific evidence on the relationship between HPR0 and HPRΔ, and addresses the risk of HPRΔ ISA emerging from HPR0 ISA and, if relevant, indicates the risk factors for such an emergence
- HPR0 ISA does not cause clinical disease in Atlantic salmon but causes a transient subclinical infection and replicates mainly in gills.
- ISA can be genetically differentiated on the basis of the sequence of a HPR of genomic segment 6 which encodes the Haemagglutinin-Esterase (HE) protein

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Summary

- A deletion within the HPR region (HPRΔ ISA) is necessary for pathogenicity
- ISA without any deletions in the HPR region (HPR0 ISA) has been reported only in apparently healthy fish and has never been associated with clinical ISA disease
- HPR0 has been detected in farmed Atlantic salmon from several countries and it has also been detected in wild Atlantic salmon in the Faroe Islands and Norway.
- There is currently no evidence indicating that HPR0 ISA naturally infects and replicates in species other than Atlantic salmon.
- The finding of HPR0 ISA in wild Atlantic salmon indicates that a reservoir outside the farmed salmon population may exist

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Summary

- All ISAV isolates from ISA disease outbreaks have deletions in the HPR region.
- In addition, all virulent strains of ISAV have either an amino acid substitution or a short amino acid insertion immediately upstream or downstream of the putative arginine cleavage site in the fusion (F) protein
- virulent HPR Δ ISAV is derived from HPR0 ISAV
- the risk of emergence of virulent ISAV from HPR0 is low but not negligible.
- Generic biosecurity measures appear to have a good effect in terms of prevention and control of ISA.
- it is not known if prior infection with HPR0 ISAV may induce some degree of protective immunity

Summary

- Risk of emergence of HPR Δ : replication of HPR0 ISAV + susceptible hosts. Any factor that affects replication or host susceptibility would, therefore, also influence the risk of emergence of HPR Δ ISAV.