Validation of a novel one-step reverse transcription polymerase chain reaction method for detecting viral haemorrhagic septicaemia virus

Viral haemorrhagic septicaemia (VHS) is one of the most serious viral diseases in salmonid and olive flounder farms. Various diagnostic methods for detecting VHS virus (VHSV) are described in the VHS chapter of the World Organization for Animal Health (OIE) Aquatic Diagnostic Manual. A conventional reverse transcription-PCR (cRT-PCR) targeting the viral nucleocapsid gene is recommended for the detection of VHSV and, to some extent, for genotypic classification. However, the recommended assay exhibits low sensitivity for the detection of VHSV genotype IVa isolates and often shows non-specific amplicons when the RNA template is extracted from non-infected fish cell lines. For these reasons, it is necessary to develop a new RT-PCR method for the foolproof detection of all VHSV genotypes and elimination of non-specific results. In this study, we selected five candidate primer sets that target the VHSV nucleoprotein (N) gene, and selected the most sensitive among them (3F/2R). We then established the optimal reaction conditions for these primers, and ensured that no non-specific amplification had occurred in the fish tissues, fish cell lines, or heterologous viruses. The analytical sensitivity of the novel cRT-PCR was compared to that of cell culture assays, real-time RT-PCR, and other cRT-PCR methods and was found to be as sensitive as or superior to the other methods for detecting all VHSV genotypes. Our newly developed cRT-PCR assay was tested with 80 isolates, representing a collection of all known VHSV genotypes worldwide. Clear and unique amplicons were amplified from all 80 VHSV isolates. The reproducibility, and partly the robustness, of the assay were confirmed by an inter-laboratory proficiency tests including nine laboratories. A high diagnostic sensitivity and specificity was confirmed on tissue material from affected fish. In conclusion a highly robust, sensitive and specific cRT-PCR for detection of VHSV was developed and validated.
Outbreak of viral haemorrhagic septicaemia (VHS) in lumpfish (Cyclopterus lumpus) in Iceland caused by VHS virus genotype IV

A novel viral haemorrhagic septicaemia virus (VHSV) of genotype IV was isolated from wild lumpfish (Cyclopterus lumpus), brought to a land-based farm in Iceland, to serve as broodfish. Two groups of lumpfish juveniles, kept in tanks in the same facility, got infected. The virus isolated was identified as VHSV by ELISA and real-time RT-PCR. Phylogenetic analysis, based on the glycoprotein (G) gene sequences, may indicate a novel subgroup of VHSV genotype IV. In controlled laboratory exposure studies with this new isolate, there was 3% survival in the I.P. injection challenged group while there was 90% survival in the immersion group. VHSV was not re-isolated from fish challenged by immersion. In a cohabitation trial, lumpfish infected I.P. (shedders) were placed in tanks with naïve lumpfish as well as naïve Atlantic salmon (Salmo salar L.). 10% of the lumpfish shedders and 43%-50% of the cohabiting lumpfish survived after 4 weeks. 80%-92% of the Atlantic salmon survived, but no viral RNA was detected by real-time RT-PCR nor VHSV was isolated from Atlantic salmon. This is the first isolation of a notifiable virus in Iceland and the first report of VHSV of genotype IV in European waters.

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Contributors: Guðmundsdóttir, S., Vendramin, N., Cuenca, A., Sigurðardóttir, H., Kristmundsson, A., Moesgaard Iburg, T., Olesen, N. J.
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BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
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Partial validation of a TaqMan real-time quantitative PCR for the detection of ranaviruses

Ranaviruses are globally emerging pathogens negatively impacting wild and cultured fish, amphibians, and reptiles. Although conventional and diagnostic real-time PCR (qPCR) assays have been developed to detect ranaviruses, these assays often have not been tested against the known diversity of ranaviruses. Here we report the development and partial validation of a TaqMan real-time qPCR assay. The primers and TaqMan probe targeted a conserved region of the major capsid protein (MCP) gene. A series of experiments using a 10-fold dilution series of *Frog virus 3* (FV3) MCP plasmid DNA revealed linearity over a range of 7 orders of magnitude (10⁷ - 10⁻¹), a mean correlation coefficient (R²) of >0.99, and a mean efficiency of 96%. The coefficient of variation of intra- and inter-assay variability ranged from <0.1-3.5% and from 1.1-2.3%, respectively. The analytical sensitivity was determined to be 10 plasmid copies of FV3 DNA. The qPCR assay detected a panel of 33 different ranaviral isolates originating from fish, amphibian, and reptile hosts from all continents excluding Africa and Antarctica, thereby representing the global diversity of ranaviruses. The assay did not amplify highly divergent ranaviruses, members of other iridovirus genera, or members of the alloherpesvirus genus *Cyprinivirus*. DNA from fish tissue homogenates previously determined to be positive or negative for the ranavirus *Epizootic hematopoietic necrosis virus* by virus isolation demonstrated a diagnostic sensitivity of 95% and a diagnostic specificity of 100%. The reported qPCR assay provides an improved expedient diagnostic tool and can be used to elucidate important aspects of ranaviral pathogenesis and epidemiology in clinically and subclinically affected fish, amphibians, and reptiles.
Piscine orthoreovirus infection in Atlantic salmon (Salmo salar) protects against subsequent challenge with infectious hematopoietic necrosis virus (IHNV)

Infectious hematopoietic necrosis virus (IHNV) is endemic in farmed rainbow trout in continental Europe and in various salmonid fish species at the Pacific coast of North America. IHN has never occurred in European Atlantic salmon (Salmo salar) farms, but is considered as a major threat for the European salmon industry. Another virus, Piscine orthoreovirus (PRV), is widespread in the sea phase of Atlantic salmon, and is identified as the causative agent of heart and skeletal muscle inflammation. The aim of this study was to investigate the interactions between a primary PRV infection and a secondary IHNV infection under experimental conditions. A PRV cohabitation challenge was performed with Atlantic salmon. At peak of PRV viremia the fish were challenged by immersion with an IHNV genogroup E isolate. Clinical signs and morbidity were monitored. Target organs were sampled at selected time points to assess viral loads of both pathogens. Antiviral immune response and presence of histopathological findings were also investigated. Whereas the PRV-negative/IHNV positive group suffered significant decrease in survival caused by IHNV, the PRV infected groups did not suffer any morbidity and showed negligible levels of IHNV infection. Antiviral response genes were induced, as measured in spleen samples, from PRV infected fish prior to IHNV challenge. In conclusion, PRV-infection protects Atlantic salmon against IHNV infection and morbidity, most likely by inducing a protective innate antiviral response.

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Web of Science (2016): Impact factor 2.798
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BFI (2015): BFI-level 2
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Web of Science (2015): Impact factor 2.928
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 2.46 SJR 1.453 SNIP 1.423
Web of Science (2014): Impact factor 2.815
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 3.13 SJR 1.681 SNIP 1.701
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ISI indexed (2012): ISI indexed yes
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Scopus rating (2009): SJR 1.489 SNIP 1.689
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BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.578 SNIP 2.002
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.749 SNIP 2.189
Web of Science (2007): Indexed yes
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Scopus rating (2005): SJR 0.885 SNIP 1.567
Web of Science (2005): Indexed yes
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Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.727 SNIP 1.068
Scopus rating (2002): SJR 0.809 SNIP 1.175
Scopus rating (2001): SJR 0.624 SNIP 1.169
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.416 SNIP 0.994
Virulence marker candidates in N-protein of viral haemorrhagic septicaemia virus (VHSV): virulence variability within VHSV Ib clones

Four major genotypes of viral haemorrhagic septicaemia virus (VHSV), which have been isolated from many marine and freshwater fish species, are known to differ in virulence. While fast and low-cost genotyping systems based on monoclonal antibodies (MAbs) have been developed for typing of VHSV virulence, there is a need for supplementing the knowledge. In particular, 2 field isolates from viral haemorrhagic septicaemia (VHS) outbreaks in sea-reared rainbow trout Oncorhynchus mykiss in Sweden, SE-SVA-14 and SE-SVA-1033 (both genotype Ib), have yielded contradictory reactions. In the present study, upon cloning by limited dilution, both isolates appeared to be heterogeneous in terms of reactivity with nucleo (N)-protein-specific MAbs as well their gene sequences. Infection trials in rainbow trout further revealed differences in the virulence of these virus clones derived from the same primary isolate. Based on a comparative analysis of the entire genome of the clones tested, we suggest that the differences in virulence are tentatively linked to substitutions of amino acids (aa) in the N-protein region covered by aa 43-46 and aa position 168, or a combination of the two. The fact that such minor naturally occurring genetic differences affect the virulence implies that even low-virulent VHSV isolates in the marine environment should be considered as a potential threat for the trout farming industry. The described MAbs can represent useful tools for initial risk assessment of disease outbreaks in farmed trout by marine VHSV isolates.

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BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.95 SJR 0.893 SNIP 0.92
Web of Science (2016): Impact factor 1.549
Emergence of a new rhabdovirus associated with mass mortalities in eelpout (Zoarces viviparous) in the Baltic Sea

We report the first description of a new Rhabdoviridae tentatively named eelpout rhabdovirus (EpRV genus Perhabdovirus). This virus was associated with mass mortalities in eelpout (Zoarces viviparous, Linnaeus) along the Swedish Baltic Sea coast line in 2014. Diseased fish showed signs of central nervous system infection, and brain lesions were confirmed by histology. A cytopathogenic effect was observed in cell culture, but ELISAs for the epizootic piscine viral haemorrhagic septicaemia virus (VHSV), infectious pancreas necrosis virus (IPNV), infectious haematopoietic necrosis virus (IHNV) and spring viraemia of carp virus (SVCV) were negative. Further investigations by chloroform inactivation, indirect fluorescence antibody test and electron microscopy indicated the presence of a rhabdovirus. By deep sequencing of original tissue suspension and infected cell culture supernatant, the full viral genome was assembled and we confirmed the presence of a rhabdovirus with 59.5% nucleotide similarity to the closest relative Siniperca chuatsi rhabdovirus. The full-genome sequence of this new virus, eelpout rhabdovirus (EpRV), has been deposited in GenBank under accession number KR612230. An RT-PCR based on the L-gene sequence confirmed the presence of EpRV in sick/dead eelpout, but the virus was not found in control fish. Additional investigations to characterize the pathogenicity of EpRV are planned.

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BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Impact factor 2.056
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
Web of Science (2013): Impact factor 1.507
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Emergence of carp edema virus (CEV) and its significance to European common carp and koi Cyprinus carpio

Carp edema virus disease (CEVD), also known as koi sleepy disease, is caused by a poxvirus associated with outbreaks of clinical disease in koi and common carp Cyprinus carpio. Originally characterised in Japan in the 1970s, international trade in koi has led to the spread of CEV, although the first recognised outbreak of the disease outside of Japan was not reported until 1996 in the USA. In Europe, the disease was first recognised in 2009 and, as detection and diagnosis have improved, more EU member states have reported CEV associated with disease outbreaks. Although the structure of the CEV genome is not yet elucidated, molecular epidemiology studies have suggested distinct geographical populations of CEV infecting both koi and common carp. Detection and identification of cases of CEVD in common carp were unreliable using the original PCR primers. New primers for conventional and quantitative PCR (qPCR) have been designed that improve detection, and their sequences are provided in this paper. The qPCR primers have successfully detected CEV DNA in archive material from investigations of unexplained carp mortalities conducted >15 yr ago. Improvement in disease management and control is possible, and the principles of biosecurity, good health management and disease surveillance, applied to koi herpesvirus disease, can be equally applied to CEVD. However, further research studies are needed to fill the knowledge gaps in the disease pathogenesis and epidemiology that, currently, prevent an accurate assessment of the likely impact of CEVD on European koi and common carp aquaculture and on wild carp stocks.

General information

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Organisations: National Veterinary Institute, Fish Diseases, Cefas Weymouth Laboratory, Wageningen University & Research, University of Veterinary Medicine Hannover, Foundation, Friedrich-Loeffler-Institute, ANSES - French Agency for Food, Environmental and Occupational Health & Safety, University of Bern, University of Veterinary Medicine Vienna, Norwegian Veterinary Institute, Vetofish, National Veterinary Research Institute, Instituto Zooprofylattico Sperimentale delle Venezie, University of South Bohemia, Veterinary Research Institute, University of Florida
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Genomic Sequencing of Ranaviruses Isolated from Edible Frogs (Pelophylax esculentus)

Ranaviruses were isolated from wild edible frogs (Pelophylax esculentus) during epizootics in Denmark and Italy. Phylogenomic analyses revealed that these isolates are closely related and belong to a clade of ranaviruses that includes the Andrias davidianus ranavirus (ADRV), common midwife toad ranavirus (CMTV), Testudo hermanni ranavirus (THRV), and pike-perch iridovirus (PPIV).

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Scopus rating (2016): CiteScore 0.41 SJR 0.583 SNIP 0.469
Web of Science (2016): Indexed yes
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Scopus rating (2014): SJR 0.539 SNIP 0.344
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Infection experiments with novel Piscine orthoreovirus from rainbow trout (Oncorhynchus mykiss) in salmonids

A new disease in farmed rainbow trout (*Oncorhynchus mykiss*) was described in Norway in 2013. The disease mainly affected the heart and resembled heart and skeletal muscle inflammation (HSMI) in Atlantic salmon (*Salmo salar L*). HSMI is associated with *Piscine orthoreovirus* (PRV), and a search for a similar virus in the diseased rainbow trout led to detection of a sequence with 85% similarity to PRV. This finding called for a targeted effort to assess the risk the new PRV-variant pose on farmed rainbow trout and Atlantic salmon by studying infection and disease pathogenesis, aiming to provide more diagnostic knowledge. Based on the genetic relationship to PRV, the novel virus is referred to as PRV-*Oncorhynchus mykiss* (PRV-Om) in contrast to PRV-*Salmo salar* (PRV-Ss). In experimental trials, intraperitoneally injected PRV-Om was shown to replicate in blood in both salmonid species, but more effectively in rainbow trout. In rainbow trout, the virus levels peaked in blood and heart of cohabitants 6 weeks post challenge, along with increased expression of antiviral genes (Mx and viperin) in the spleen, with 80-100% of the cohabitants infected. Heart inflammation was diagnosed in all cohabitants examined 8 weeks post challenge. In contrast, less than 50% of the Atlantic salmon cohabitants were infected between 8 and 16 weeks post challenge and the antiviral response in these fish was very low. From 12 weeks post challenge and onwards, mild focal myocarditis was demonstrated in a few virus-positive salmon. In conclusion, PRV-Om infects both salmonid species, but faster transmission, more notable antiviral response and more prominent heart pathology were observed in rainbow trout.

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Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.11 SJR 1.236 SNIP 1.101
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.32 SJR 1.427 SNIP 1.136
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.54 SJR 1.559 SNIP 1.148
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.94 SJR 1.772 SNIP 1.153
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 4.15 SJR 1.982 SNIP 1.156
Web of Science (2012): Impact factor 3.73
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 4.58 SJR 2.425 SNIP 1.233
Validation of a KHV antibody enzyme-linked immunosorbent assay (ELISA)
Koi herpesvirus (KHV) causes KHV disease (KHVD). The virus is highly contagious in carp or koi and can induce a high mortality. Latency and, in some cases, a lack of signs presents a challenge for virus detection. Appropriate immunological detection methods for anti-KHV antibodies have not yet been fully validated for KHV. Therefore, it was developed and validated an enzyme-linked immunosorbent assay (ELISA) to detect KHV antibodies. The assay was optimized with respect to plates, buffers, antigens and assay conditions. It demonstrated high diagnostic and analytical sensitivity and specificity and was particularly useful at the pond or farm levels. Considering the scale of the carp and koi industry worldwide, this assay represents an important practical tool for the indirect detection of KHV, also in the absence of clinical signs.

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Organisations: National Veterinary Institute, Fish Diseases, Friedrich-Loeffler-Institute, Chinese Academy of Fisheries Sciences, National Veterinary Research Institute, Agence Nationale de Sécurité Sanitaire de l’Alimentation, GeneReach Biotechnology Corporation, Chinese Academy of Fishery Sciences, University of Stirling, The Hebrew University-Hadassah Medical School, Cefas Weymouth Laboratory, Fish Health Service Saxony, Fish Health Service Thuringia, West Pomeranian University of Technology
Validation of a serum neutralization test for detection of antibodies specific to cyprinid herpesvirus 3 in infected common and koi carp (Cyprinus carpio)

Cyprinid herpesvirus 3 (CyHV-3) is the aetiological agent of a serious infective, notifiable disease affecting common carp and varieties. In survivors, infection is generally characterized by a subclinical latency phase with restricted viral replication. The CyHV-3 genome is difficult to detect in such carrier fish that represent a potential source of dissemination if viral reactivation occurs. In this study, the analytical and diagnostic performance of an alternative serum neutralization (SN) method based on the detection of CyHV-3-specific antibodies was assessed using 151 serum or plasma samples from healthy and naturally or experimentally CyHV-3-infected carp. French CyHV-3 isolate 07/108b was neutralized efficiently by sera from carp infected with European, American and Taiwanese CyHV-3 isolates, but no neutralization was observed using sera specific to other aquatic herpesviruses. Diagnostic sensitivity, diagnostic specificity and repeatability of 95.9%, 99.0% and 99.3%, respectively, were obtained, as well as a compliance rate of 89.9% in reproducibility testing. Neutralizing antibodies were steadily detected in infected carp subjected to restrictive or permissive temperature variations over more than 25 months post-infection. The results suggest that this non-lethal diagnostic test could be used in the future to improve the epidemiological surveillance and control of CyHV-3 disease.
Viral haemorrhagic septicaemia virus (VHSV) remains viable for several days but at low levels in the water flea Moina macrocopa

Viral haemorrhagic septicaemia virus (VHSV) Genotype IVb has been isolated from amphipods belonging to the genus Diporeia, but it has yet to be established whether crustacean zooplankton act as vectors of this virus for fish species. Therefore, we evaluated the viability of infectious VHSV in the water flea Moina macrocopa. VHSV was re-isolated from replicate groups of M. macrocopa that had been immersed with 10^{8.0}, 10^{7.0}, and 10^{5.0} TCID_{50} mL^{-1} of VHSV (DK-3592B, Genotype Ia). Furthermore, 40 M. macrocopa that had been immersed with 10^{8.0} TCID_{50} mL^{-1} of VHSV for 72 h had VHSV titers of 10^{2.7}-10^{4.3} TCID_{50}. Thus, VHSV was clearly taken up by M. macrocopa and remained viable in this crustacean for several days. However, no mortality was observed over a 28 d period in rainbow trout Oncorhynchus mykiss that were fed VHSV-contaminated M. macrocopa for 14 d, and we found that the virus titer significantly decreased after a 4 h incubation with pyloric caecal extracts from rainbow trout, indicating that passage through the gut is likely to result in a significant decrease in viral titer. This may explain why consumption of prey containing low levels of VHSV did not result in clinical VHS.

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Contributors: Ito, T., Olesen, N. J.
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A novel multiplex RT-qPCR method based on dual-labelled probes suitable for typing all known genotypes of viral haemorrhagic septicaemia virus

Viral haemorrhagic septicaemia (VHS) is a notifiable fish disease, whose causative agent is a rhabdovirus isolated from a wide range of fish species, not only in fresh but also in marine and brackish waters. Phylogenetic studies have identified four major genotypes, with a strong geographical relationship. In this study, we have designed and validated a new procedure – named binary multiplex RT-qPCR (bmRT-qPCR) – for simultaneous detection and typing of all four genotypes of VHSV by real-time RT-PCR based on dual-labelled probes and composed by two multiplex systems designed for European and American/Asiatic isolates, respectively, using a combination of three different fluorophores. The specificity of the procedure was assessed by including a panel of 81 VHSV isolates covering all known genotypes and subtypes of the virus, and tissue material from experimentally infected rainbow trout, resulting in a correct detection and typing of all strains. The analytical sensitivity was evaluated in a comparative assay with titration in cell culture, observing that both methods provided similar limits of detection. The proposed method can be a powerful tool for epidemiological analysis of VHSV by genotyping unknown samples within a few hours.

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Organisations: National Veterinary Institute, Section for Virology, University of Santiago de Compostela
Contributors: Vázquez, D., López-Vázquez, C., Skall, H. F., Mikkelsen, S. S., Olesen, N. J., Dopazo, C. P.
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BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
First evidence of infectious hematopoietic necrosis virus (IHNV) in the Netherlands
In spring 2008, infectious hematopoietic necrosis virus (IHNV) was detected for the first time in the Netherlands. The virus was isolated from rainbow trout, Oncorhynchus mykiss (Walbaum), from a put-and-take fishery with angling ponds. IHNV is the causative agent of a serious fish disease, infectious hematopoietic necrosis (IHN). From 2008 to 2011, we diagnosed eight IHNV infections in rainbow trout originating from six put-and-take fisheries (symptomatic and asymptomatic fish), and four IHNV infections from three rainbow trout farms (of which two were co-infected by infectious pancreatic necrosis virus, IPNV), at water temperatures between 5 and 15 °C. At least one farm delivered trout to four of these eight IHNV-positive farms. Mortalities related to IHNV were mostly <40%, but increased to nearly 100% in case of IHNV and IPNV co-infection. Subsequent phylogenetic analysis revealed that these 12 isolates clustered into two different monophyletic groups within the European IHNV genogroup E. One of these two groups indicates a virus-introduction event by a German trout import, whereas the second group indicates that IHNV was already (several years) in the Netherlands before its discovery in 2008.
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BFI (2015): BFI-level 1
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Web of Science (2014): Impact factor 2.056
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ISI indexed (2013): ISI indexed yes
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BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.7
Web of Science (2012): Impact factor 1.591
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.09
Web of Science (2011): Impact factor 2
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Impact factor 1.603
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Web of Science (2008): Indexed yes
Web of Science (2007): Indexed yes
Genomic Sequence of a Ranavirus Isolated from Short-Finned Eel (Anguilla australis)

The short-finned eel ranavirus (SERV) was isolated from short-finned eel imported to Italy from New Zealand. Phylogenomic analyses revealed that SERV is a unique member of the genus Ranavirus, family Iridoviridae, branching at the base of the tree near other fish ranaviruses.

General information
State: Published
Organisations: Section for Virology, National Veterinary Institute, University of Florida, Instituto Zooprofilattico Sperimentale delle Venezie, James Cook University Queensland
Contributors: Subramaniam, K., Toffan, A., Cappellozza, E., Steckler, N. K., Olesen, N. J., Ariel, E., Waltzek, T. B.
Number of pages: 2
Publication date: 2016
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Publication information
Journal: Genome Announcements
Volume: 4
Issue number: 4
Article number: e00843-16
ISSN (Print): 2169-8287
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.01 SJR 0.553 SNIP 0.407
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 0.41 SJR 0.583 SNIP 0.469
Web of Science (2016): Indexed yes
Ranaviruses have been isolated from Atlantic cod (Gadus morhua) and turbot (Scophthalmus maximus) in Denmark. Phylogenomic analyses revealed that these two ranaviruses are nearly identical and form a distinct clade at the base of the ranavirus tree branching off near other fish ranaviruses.
Phylogeny of the Viral Hemorrhagic Septicemia Virus in European Aquaculture

One of the most valuable aquaculture fish in Europe is the rainbow trout, Oncorhynchus mykiss, but the profitability of trout production is threatened by a highly lethal infectious disease, viral hemorrhagic septicemia (VHS), caused by the VHS virus (VHSV). For the past few decades, the subgenogroup Ia of VHSV has been the main cause of VHS outbreaks in European freshwater-farmed rainbow trout. Little is currently known, however, about the phylogenetic radiation of this Ia lineage into subordinate Ia clades and their subsequent geographical spread routes. We investigated this topic using the largest Ia-isolate dataset ever compiled, comprising 651 complete G gene sequences: 209 GenBank Ia isolates and 442 Ia isolates from this study. The sequences come from 11 European countries and cover the period 1971-2015. Based on this dataset, we documented the extensive spread of the Ia population and the strong mixing of Ia isolates, assumed to be the result of the Europe-wide trout trade. For example, the Ia lineage underwent a radiation into nine Ia clades, most of which are difficult to allocate to a specific geographic distribution. Furthermore, we found indications for two rapid, large-scale population growth events, and identified three polytomies among the Ia clades, both of which possibly indicate a rapid radiation. However, only about 4% of Ia haplotypes (out of 398) occur in more than one European country. This apparently conflicting finding regarding the Europe-wide spread and mixing of Ia isolates can be explained by the high mutation rate of VHSV. Accordingly, the mean period of occurrence of a single Ia haplotype was less than a full year, and we found a substitution rate of up to $7.813 \times 10^{-4}$ nucleotides per site per year. Finally, we documented significant differences between Germany and Denmark regarding their VHS epidemiology, apparently due to those countries’ individual handling of VHS.
Complete and transparent reporting of key elements of diagnostic accuracy studies for infectious diseases in cultured and
wild aquatic animals benefits end-users of these tests, enabling the rational design of surveillance programs, the
assessment of test results from clinical cases and comparisons of diagnostic test performance. Based on deficiencies in
the Standards for Reporting of Diagnostic Accuracy (STARD) guidelines identified in a prior finfish study (Gardner et al.
2014), we adapted the Standards for Reporting of Animal Diagnostic Accuracy Studies-paratuberculosis (STRADAS-
paraTB) checklist of 25 reporting items to increase their relevance to finfish, amphibians, molluscs, and crustaceans
and provided examples and explanations for each item. The checklist, known as STRADAS-aquatic, was developed and
refined by an expert group of 14 transdisciplinary scientists with experience in test evaluation studies using field and
experimental samples, in operation of reference laboratories for aquatic animal pathogens, and in development of
international aquatic animal health policy. The main changes to the STRADAS-paraTB checklist were to nomenclature
related to the species, the addition of guidelines for experimental challenge studies, and the designation of some items as
relevant only to experimental studies and ante-mortem tests. We believe that adoption of these guidelines will improve
reporting of primary studies of test accuracy for aquatic animal diseases and facilitate assessment of their fitness-for-
purpose. Given the importance of diagnostic tests to underpin the Sanitary and Phytosanitary agreement of the World
Trade Organization, the principles outlined in this paper should be applied to other World Organisation for Animal Health
(OIE)-relevant species.
Virulence of viral haemorrhagic septicaemia virus (VHSV) genotype III in rainbow trout

In general, viral haemorrhagic septicaemia virus (VHSV) isolates from marine fish species in European waters (genotypes G Ib, GII and GIII) are non- to low virulent in rainbow trout. However, a VHSV isolation was made in 2007 from a disease outbreak in sea farmed rainbow trout in Norway. The isolate, named NO-2007-50-385, was demonstrated to belong to GIII. This isolate has attracted attention to assess which of the viral genome/proteins might be associated with the virulence in rainbow trout. In this study, we describe the difference of virulence in rainbow trout between the NO-2007-50-385 and 4p168 isolates as representatives of virulent and non-virulent GIII isolates, respectively. Rainbow trout were bath challenged with VHSV NO-2007-50-385 for 1 and 6 h, resulting in cumulative mortalities of 5 and 35%, respectively. No mortality was observed in the rainbow trout groups immersed with the genotype III VHSV isolate 4p168 for 1 and 6 h. The viral titre in organs from fish challenged with NO-2007-50-385 for 6 h increased more rapidly than those exposed for 1 h. By in vitro studies it was demonstrated that the final titres of VHSV DK-3592B (GI), NO-2007-50-385 and 4p168 inoculated on EPC cells were very similar, whereas when inoculated on the rainbow trout cell line RTG-2 the titre of the non-virulent 4p168 isolate was 3-4 logs below the two other VHSV isolates. Based on a comparative analysis of the entire genome of the genotype III isolates, we suggest that substitutions of amino acids in positions 118-123 of the nucleo-protein are candidates for being related to virulence of VHSV GIII in rainbow trout.
Characterization of eelpout rhabdovirus (ERV) on cell culture

**General information**

State: Published
Organisations: National Veterinary Institute, Section for Virology, National Veterinary Institute, Swedish Agency for Marine and Water Management
Pages: 228-228
Publication date: 2015

**Host publication information**
Title of host publication: 17th International Conference on Diseases of Fish And Shellfish : Abstract book
Place of publication: Las Palmas
Publisher: European Association of Fish Pathologists
Article number: P-004
Electronic versions:

Book_of_abstracts_17th_International_conference_on_Diseases_of_Fish_and_Shellfish.pdf
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Complete genome sequence of eelpout rhabdovirus (ERV) identified by deep sequencing of viral RNA

**General information**

State: Published
Organisations: National Veterinary Institute, Section for Virology, National Veterinary Institute, Swedish Agency for Marine and Water Management
Pages: 341-341
Publication date: 2015

**Host publication information**
Title of host publication: 17th International Conference on Diseases of Fish And Shellfish : Abstract book
Place of publication: Las Palmas
Publisher: European Association of Fish Pathologists
Article number: P-117
Electronic versions:

Book_of_abstracts_17th_International_conference_on_Diseases_of_Fish_and_Shellfish.pdf
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Detection of antibodies specific to koi herpesvirus (KHV) by serum neutralization test

**General information**

State: Published
Organisations: National Veterinary Institute, Section for Virology, ANSES - French Agency for Food, Environmental and Occupational Health & Safety, Friedrich-Loeffler-Institute, Instituto Zooprofilattico Sperimentale delle Venezie, National Veterinary Research Institute, Wageningen University & Research
Evaluation of the effect of percolation and NaCl solutions on viral haemorrhagic septicaemia virus (VHSV) under experimental conditions

In the present Danish "Ministerial order no. 965 of 18/07/2013 regarding authorisation and operation of aquaculture farms and sale of aquatic organisms and products thereof" fish cutting plants have according to 20 the possibility to get rid of their wastewater by percolation. To examine the effect of percolation on viral haemorrhagic septicaemia virus (VHSV) a sand column experiment has been performed. VHSV was infused onto a column packed with gravel as top and bottom layer (in total 22 cm) and dug sand (76 cm). Over a period of 18 h $3.9 \times 10^{10}$ TCID50 VHSV was pumped onto the column where after tap water was added over the rest of the experimental period. The experiment ran over 7 days. During that period samples were collected from the outlet for virological examination. The sampling was most intense in the period where there was the highest risk of VHSV escaping the column. VHSV was not isolated from any of the outlet samples. As the sensitivity of the virological examination was 13.9 TCID50/ml a reduction of $>4$ log was shown at the outlet. Percolation thus seems to be a usable method for sanitation of water contaminated with VHSV. Changes in temperature, pH, earth types etc. may potentially change the reduction. Some of the fish cutting plants also produce smoked trout fillets using brine in the process. It was tested whether a high NaCl solution will inactivate VHSV. After 20 h with a salinity of 20.9% no inactivation was observed.

Statement of relevance
Fish processing plants slaughtering VHSV infected fish may discharge wastewater containing the disease causing virus. In order to protect both farmed and wild fish it is important that this virus does not get into contact with other fish. This manuscript concerns the fate of VHSV when percolated through the ground. In Denmark this is an approved method to get rid of the wastewater. To our knowledge, for fish pathogenic viruses, this kind of investigation has never been published before and the presented knowledge is therefore new and valuable. (C) 2015 Elsevier B.V. All rights reserved.
Fishpathogens.eu/noda: a free and handy online platform for Betanodavirus targeted research and data sharing

Viral nervous necrosis (VNN) is a severe neuropathological disease affecting a broad variety of finfish species worldwide. The causative agents of VNN are small viruses with a bi-segmented RNA genome known as betanodaviruses. At least four species with distinct but yet insufficiently characterized epidemiological features are recognized. The spread of VNN to an increasing number of host species, its wide geographic extent and its economical and ecological impacts justify the importance of collating as much molecular data as possible for tracing the origin of viral isolates and highlight the need for a freely accessible tool for epidemiological and molecular data sharing and consultation. For this purpose, we established a web-based specific database using the www.fishpathogens.eu platform, with the aim of collecting molecular and epidemiological information on VNN viruses, with relevance to their control, management and research studies.
Genetics of VHSV in Europe

State: Published
Organisations: National Veterinary Institute, Section for Virology, Friedrich-Loeffler-Institute, University of Bern, Wageningen University & Research, Aarhus University, ANSES - French Agency for Food, Environmental and Occupational Health & Safety, Instituto Zooprofilattico Sperimentale delle Venezie
Contributors: Cieslak, M., Baud, M., Diserens, N., Engelsma, M., Haenen, O., Mousakhani, S., Olesen, N. J., Panzarin, V., Skall, H. F., Wahl, T., Schütze, H.
Pages: 55-55
Publication date: 2015

Host publication information
Title of host publication: 17th International Conference on Diseases of Fish and Shellfish : Abstract book
Place of publication: Las Palmas
Publisher: European Association of Fish Pathologists
Article number: O-047
Electronic versions:
Book_of_abstracts_17th_International_conference_on_Diseases_of_Fish_and_Shellfish.pdf
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Inactivation of vhsv by infiltration and salt under experimental conditions

State: Published
Organisations: National Veterinary Institute, Section for Virology, DHI Denmark
Contributors: Skall, H. F., Jørgensen, C., Olesen, N. J.
Pages: 149-149
Publication date: 2015

Host publication information
Title of host publication: 17th International Conference on Diseases of Fish and Shellfish
Electronic versions:
Inter-laboratory proficiency test on notifiable fish diseases: a tool to strengthen diagnostic capacities for viral fish diseases

**General information**
State: Published
Organisations: National Veterinary Institute, Section for Virology
Contributors: Vendramin, N., Mikkelsen, S. S., Olesen, N. J.
Pages: 389-389
Publication date: 2015

**Host publication information**
Title of host publication: 17th International Conference on Diseases of Fish And Shellfish: Abstract book
Place of publication: Las Palmas
Publisher: European Association of Fish Pathologists
Article number: P-165
Electronic versions:
Book_of_abstracts_17th_International_conference_on_Diseases_of_Fish_and_Shellfish.pdf
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Isolation of VHS and IHN from recent outbreaks on croatian rainbow trout farms

**General information**
State: Published
Organisations: National Veterinary Institute, Section for Virology, Croatian Veterinary Institute, Instituto Zooprofilattico Sperimentale delle Venezie
Pages: 241-241
Publication date: 2015

**Host publication information**
Title of host publication: 17th International Conference on Diseases of Fish And Shellfish: Abstract book
Place of publication: Las Palmas
Publisher: European Association of Fish Pathologists
Article number: P-017
Electronic versions:
Book_of_abstracts_17th_International_conference_on_Diseases_of_Fish_and_Shellfish.pdf
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Mass mortalities in baltic sea eelpout (zoarces viviparous) caused by a new rhabdovirus

**General information**
State: Published
Organisations: National Veterinary Institute, Section for Virology, National Veterinary Institute, Swedish Agency for Marine and Water Management
Pages: 67-67
Publication date: 2015

**Host publication information**
Title of host publication: 17th International Conference on Diseases of Fish And Shellfish: Abstract book
Place of publication: Las Palmas
Publisher: European Association of Fish Pathologists
Article number: O-059
Electronic versions:
Book_of_abstracts_17th_International_conference_on_Diseases_of_Fish_and_Shellfish.pdf
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015
Molecular tracing of VHS in Denmark

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, Norwegian Veterinary Institute, Friedrich-Loeffler-Institute, Danish Veterinary and Food Administration
Contributors: Mikkelsen, S. S., Schuetze, H., Korsholm, H., Jensen, B. B., Bruun, M. S., Olesen, N. J.
Pages: 194-194
Publication date: 2015

Host publication information
Title of host publication: 17th International Conference on Diseases of Fish And Shellfish : Abstract book
Place of publication: Las Palmas
Publisher: European Association of Fish Pathologists
Article number: O-186
Electronic versions:
Book_of_abstracts_17th_International_conference_on_Diseases_of_Fish_and_Shellfish.pdf
Source: PublicationPreSubmission
Source-ID: 118580288
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Sygdom og sundhed

General information
State: Published
Organisations: Section for Virology, National Veterinary Institute, Section for Bacteriology, Pathology and Parasitology, Dansk Akvakultur, University of Copenhagen
Contributors: Henriksen, N. H., Buchmann, K., Olesen, N. J., Dalsgaard, I., Madsen, L., Bruun, M. S., Boutrup, T. S.
Number of pages: 39
Pages: 56-94
Publication date: 2015

Host publication information
Title of host publication: Akvakultur
Publisher: Landbrugsforlaget
URLs:
http://www.danskakvakultur.dk/uddannelse/e-bog
Source: FindIt
Source-ID: 2280456100
Research output: Research - peer-review › Book chapter – Annual report year: 2016

VHS virus - present situation
Geographic distribution: VHSV can be divided into 4 genotypes and at least 8 subtypes and there is a close linkage between genotypes, geographic range and affected fish species. VHS is still only reported from the Northern hemisphere and while countries like Denmark, Norway and England have freed themselves for VHS, several countries are still struggling with the disease. An update on the recent VHS outbreaks in rainbow trout in Iran, in olive flounder in Korea, in wrasse in Scotland, in turbot in Turkey, in a number of fish species in the great lakes in USA and Canada, and a general overview of the worldwide distribution of the disease will be given. Virus evolution: Recent studies indicate that only a few amino acid changes in the structural proteins of VHSV can change the virulence patterns significantly, thereby coming closer to assessing the risk of none to low virulent viruses becoming high virulent. Virulence factors both depend on the ability of VHSV to enter a cell and on the speed and efficiency of virus replication in the cells. Apparently the viral nucleocapsid protein plays a very important role for the later and seems to be the target for determination of a virulence marker.

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, Aarhus University
Contributors: Skall, H. F., Olesen, N. J.
Number of pages: 1
Publication date: 2015

Host publication information
Title of host publication: Dafinet and Profish Workshop : Book of abstracts
Place of publication: Frederiksberg C
Publisher: University of Copenhagen
Detection of virus level in tissues of rainbow trout, *Oncorhynchus mykiss* in clinical stage of viral hemorrhagic septicemia

In order to detecting VHS virus titer in various tissues in clinical stage of VHS disease, rainbow trout, *Oncorhynchus mykiss*, were exposed to virus by bath. The experiments were carried out with 140 fish obtained from rainbow trout farm. The fish were divided into two equal groups in 120 Liter tanks containing 70 fish. Group one was considered as control and group two infected by bath challenge with 10³ TCID₅₀ ml⁻¹ of a VHS virus strain serologically similar to reference strain F1 with high pathogenicity in rainbow trout. At days 12, 13 and 14 post infection the organs including kidney, spleen, heart, skin, liver, pyloric caeca and brain were sampled from dead fish with appropriate clinical signs of VHS separately. Each sample was placed in vials adding 1 ml transport medium to assess virus titer in various tissues. Results of the study, showed that significant difference between virus loads in various organs (p≤ 0.05). The highest virus titer belongs to the heart while it is in minimum amount in the skin. According to the virus quantity the experimental tissues can be divided in three categories, respectively. Heart and kidney performed the highest amount of virus quantities while liver, gill, pyloric caeca and skin showed the lowest with brain and spleen lying in between. These results point out that the significant levels of VHS virus found in rainbow trout tissues are relevant for the biosecurity in VHS-free areas mainly when fish are displayed and retained as whole fish.
Evolutionary dynamics and genetic diversity from three genes of *Anguillid rhabdovirus*

Wild freshwater eel populations have dramatically declined in recent past decades in Europe and America, partially through the impact of several factors including the widespread of infectious diseases. The anguillid rhabdoviruses eel virus European X (EVEX) and eel virus American (EVA) potentially play a role in this decline, even if their real contribution is still unclear. In this study, we investigate the evolutionary dynamics and genetic diversity of anguillid rhabdoviruses by analysing sequences from the glycoprotein, nucleoprotein and phosphoprotein (P) genes of 57 viral strains collected from seven countries over 40 years using maximum-likelihood and Bayesian approaches. Phylogenetic trees from the three genes are congruent and allow two monophyletic groups, European and American, to be clearly distinguished. Results of nucleotide substitution rates per site per year indicate that the P gene is expected to evolve most rapidly. The nucleotide diversity observed is low (2-3 %) for the three genes, with a significantly higher variability within the P gene, which encodes multiple proteins from a single genomic RNA sequence, particularly a small C protein. This putative C protein is a potential molecular marker suitable for characterization of distinct genotypes within anguillid rhabdoviruses. This study provides, to our knowledge, the first molecular characterization of EVA, brings new insights to the evolutionary dynamics of two genotypes of *Anguillid rhabdovirus*, and is a baseline for further investigations on the tracking of its spread.

**General information**

State: Published  
Organisations: National Veterinary Institute, Section for Virology, ANSES - French Agency for Food, Environmental and Occupational Health & Safety, Friedrich-Loeffler-Institute, Central Veterinary Institute, Instituto Zooprofilattico Sperimentale delle Venezie, Cefas Weymouth Laboratory  
Contributors: Bellec, L., Cabon, J., Bergmann, S., de Boisséson, C., Engelsma, M., Haenen, O., Morin, T., Olesen, N. J., Schuetze, H., Toffan, A., Way, K., Bigarré, L.  
Number of pages: 12  
Pages: 2390-2401  
Publication date: 2014  
Peer-reviewed: Yes

**Publication Information**

Journal: Journal of General Virology  
Volume: 95  
ISSN (Print): 0022-1317  
Ratings:  
BFI (2018): BFI-level 1  
Web of Science (2018): Indexed yes  
BFI (2017): BFI-level 1  
Scopus rating (2017): CiteScore 2.68 SJR 1.325 SNIP 0.877  
Web of Science (2017): Impact factor 2.514  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 1  
Scopus rating (2016): CiteScore 2.93 SJR 1.544 SNIP 0.891  
Web of Science (2016): Impact factor 2.838  
BFI (2015): BFI-level 1  
Scopus rating (2015): CiteScore 3.26 SJR 1.738 SNIP 0.998  
Web of Science (2015): Impact factor 3.192  
Web of Science (2015): Indexed yes  
BFI (2014): BFI-level 1  
Scopus rating (2014): CiteScore 3.25 SJR 1.69 SNIP 1.057  
Web of Science (2014): Impact factor 3.183  
Web of Science (2014): Indexed yes
First isolation of hirame rhabdovirus from freshwater fish in Europe.

A rhabdovirus was isolated in cell culture inoculated with tissue material from diseased grayling, Thymallus thymallus (L.), originating from a fish farm affected by a mortality episode in Poland. Diagnostics tests showed that the virus was not related to novirhabdoviruses known in Europe, nor to vesiculovirus-like species, except perch rhabdovirus (PRhV) with which it shared moderate serological relations. However, RT-PCR with PRhV probes gave negative results. To identify the virus, a random-priming sequence-independent single primer amplification was adopted. Surprisingly, two of the obtained
sequences exhibited a high identity (>99%) with hirame rhabdovirus (HIRRV), a novirhabdovirus usually found in fish in marine Asiatic countries, for instance Japan, China and Korea. The full-length sequence of the phosphoprotein gene (P) demonstrated a higher identity of the present isolate with HIRRV from China compared with the Korean isolate. An identical viral sequence was also found in brown trout, Salmo trutta trutta L., affected by mortalities in a second farm in the same region, after a likely contamination from the grayling farm. To our knowledge, this is the first report of HIRRV in Europe, and in two hosts from fresh water that have not been described before as susceptible species.

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, National Veterinary Research Institute, European University of Brittany
Contributors: Borzym, E., Matras, M., Maj-Paluch, J., Baud, M., De Boisséson, C., Talbi, C., Olesen, N. J., Bigarré, L.
Pages: 423-430
Publication date: 2014
Peer-reviewed: Yes

Publication information
Journal: Journal of Fish Diseases
Volume: 37
Issue number: 5
ISSN (Print): 0140-7775
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Impact factor 2.056
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
Web of Science (2013): Impact factor 1.507
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.7
Web of Science (2012): Impact factor 1.591
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.09
Web of Science (2011): Impact factor 2
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Impact factor 1.603
Koi herpesvirus disease (khvd) surveillance and diagnosis

According to the European Council Directive 2006/88/EC, additional legislation should be implemented describing sampling and diagnostic procedures for the diseases listed in Annex IV Part 2 of the Directive. The sampling plans and the diagnostic methods for the detection and confirmation of VHS and IHN diseases and for ISA disease are described in commission decisions from 2001 and 2003, respectively. However, KHV was only included as a non-exotic disease at the implementation of the Council Directive and no descriptions of procedures were available for this disease. A preliminary version, describing sampling and diagnostic procedures, was later provided on the EUFL Fish web page. This version was based on recommendations from the report of a KHV expert working group under the EPIZONE network "KHV PCR diagnosis and surveillance" convened at the Central Veterinary Institute, Lelystad, The Netherlands, in 2009. However, significant new knowledge based on new research on KHV has appeared in recent years. So, the EUFL asked the Commission for permission to organize an expert meeting in order to discuss and agree common new recommendations for sampling and diagnosis of KHV for implementation in a new Commission Decision. The two day meeting was held at the premises of the EUFL at Frederiksberg, Denmark and three of the top experts in the field of KHV from Germany, Netherlands and UK, respectively, were invited to participate. The meeting was very successful and produced final drafts of two documents:

1) The Commission decision Part 2 on surveillance and diagnostic methods for KHV
2) Diagnostic procedures for the surveillance and confirmation of KHV disease. Significant changes from the former versions were accepted and recommended for inclusion in the commission decision. Among the changes are:
   - The splitting of sampling and diagnostic tests for diagnostic and surveillance purposes respectively.
   - Inclusion of real-time PCR as the method of choice for surveillance.
   - Specification on how to define a CyHV-3 strain.

The participants agreed that the meeting had been fruitful and brought together skills and experience on this fish disease from different parts of Europe. In the report of the meeting sent to the commission important issues concerning serology and cyprinid herpesvirus variants were raised. We hope that our recommendations to resolve these issues will be considered by the Standing Committee On the Food Chain and Animal Health (SCOFCAH). This presentation will provide more details of these issues as well as providing detail from the final documents described above.

General information

State: Published
Organisations: National Veterinary Institute, Section for Virology, Aquatic Health and Hygiene Division, Friedrich-Loeffler-Institute, Central Veterinary Institute
Contributors: Way, K., Bergmann, S. M., Engelsma, M., Mikkelsen, S. S., Vendramin, N., Olesen, N. J.
Publication date: 2014
Peer-reviewed: Yes
Event: Abstract from 18th Annual Workshop of the National Reference Laboratories for Fish Diseases, Frederiksberg C, Denmark.
Electronic versions:
Pages_from_Report_18th_AW_2014_1_1.pdf
Source: PublicationPreSubmission
Source-ID: 103605890
Molecular tracing of aquatic viruses - MOLTRAQ

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, Friedrich-Loeffler-Institute, Danish Veterinary and Food Administration, National Veterinary Institute
Contributors: Mikkelsen, S. S., Schuetze, H., Korsholm, H., Jensen, B. B., Olesen, N. J.
Number of pages: 2
Publication date: 2014
Peer-reviewed: Yes
Event: Abstract from 9th International Symposium on Viruses of Lower Vertebrates, Malaga, Spain.
Electronic versions:
orbit.dtu.dk_admin_files_103604906_9th_isvlv_abstract_book.pdf

Molecular Tracing of Aquatic Viruses - MOLTRAQ

Molecular tracing of VHS in Denmark

MOLTRAQ is a pan-European project that aims to increase knowledge on a wide array of economically important viral diseases in fish and molluscs on both the epidemiological and the genetic level. It centers on the use of spatio-temporal and phylogenetic information to create phylogeographic and scenario-simulation models to identify important factors for the spread of disease and to develop and evaluate new control strategies.

Viral haemorrhagic septicaemia Virus (VHSV) is one of the most important viral fish diseases and is widely spread all over Europe and creates significant losses every year for European fish farmers. VHSV has been endemic in Denmark since the 1950’s but after an effective control and eradication programme that spanned more than 45 years the virus was finally eradicated from Denmark in 2009.

As part of MOLTRAQ more than 200 Danish isolates, including isolates from both marine and freshwater outbreaks, spanning from 1978-2003 were selected for analysis. The full-length G-gene was sequenced for all isolates and together with epidemiological information these data are being used to create phylogenetic and phylogeographic models to help infer the relationship between VHS outbreaks in Denmark and to look into the spread of the disease over a historical period as well as the effectivenes of containment and eradication programmes.

Molecular tracing shows that the numerous VHS outbreaks in marine fish farms were due to stocking these with VHS infected rainbow trout in the incubation phase and not to infection with VHSV from the marine environment. From evaluating more than 400 VHSV isolates from Denmark it appears that evolution of low virulent VHSV from marine fish species is a very rare event and is most likely related to feeding with fresh fish which is now prohibited in rainbow trout farming.

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, Friedrich-Loeffler-Institute, Danish Veterinary and Food Administration, National Veterinary Institute
Contributors: Mikkelsen, S. S., Schuetze, H., Korsholm, H., Jensen, B. B., Bruun, M. S., Olesen, N. J.
Number of pages: 1
Publication date: 2014
Report on EURL training course 2014
The training courses took place in Copenhagen at DTU National Veterinary Institute, Bülowsvej 27, 2700 Frederiksberg C
denmark, from September the 8th to the 17th, 2014. Two courses were prepared, the first one, with 10 trainees, was
titled “Methods for implementation of surveillance procedures for listed fish diseases” and took place from 8th to 12th
September 2014. The second course was entitled “Real-time PCR for diagnostics and surveillance of Fish Diseases” and
took place in Copenhagen 15th to 17th September 2014 with 13 participants. 3 persons participated in both training
courses. The overall purpose of the training course was to provide an opportunity for the NRLs to send employees for
training in techniques relevant when working with fish diseases. Staff of the EURL provided this training, together with
teachers from the Danish Veterinary and Food Administration and CVI, The Netherlands. Also, knowledge-sharing and
discussions between participants and teachers were important parts of the courses.

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology
Contributors: Olesen, N. J., Vendramin, N., Bruun, M. S., Mikkelsen, S. S.
Number of pages: 17
Publication date: 2014

Publication information
Original language: English
Electronic versions:
Training_course_Report.pdf
Research output: Research › Report – Annual report year: 2014

Results of the proficiency test, PT1 and PT2, 2014

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, EU Reference Laboratory for Fish Diseases
Contributors: Vendramin, N., Ojala, A., Mikkelsen, S. S., Olesen, N. J.
Number of pages: 1
Publication date: 2014
Peer-reviewed: Yes
Event: Abstract from 18th Annual Workshop of the National Reference Laboratories for Fish Diseases, Copenhagen,
Denmark.
Electronic versions:
Session5.pdf
Source: PublicationPreSubmission
Source-ID: 118581093
Research output: Research › peer-review › Conference abstract for conference – Annual report year: 2015

Screening for Viral Hemorrhagic Septicemia Virus in Marine Fish along the Norwegian Coastal Line
Viral hemorrhagic septicemia virus (VHSV) infects a wide range of marine fish species. To study the occurrence of VHSV
in wild marine fish populations in Norwegian coastal waters and fjord systems a total of 1927 fish from 39 different species
were sampled through 5 research cruises conducted in 2009 to 2011. In total, VHSV was detected by rRT-PCR in twelve
samples originating from Atlantic herring (Clupea harengus), haddock (Melanogrammus aeglefinus), whiting (Merlangius
merlangus) and silvery pout (Gadiculus argenteus). All fish tested positive in gills while four herring and one silvery pout
also tested positive in internal organs. Successful virus isolation in cell culture was only obtained from one pooled Atlantic
herring sample which shows that today’s PCR methodology have a much higher sensitivity than cell culture for detection
of VHSV. Sequencing revealed that the positive samples belonged to VHSV genotype Ib and phylogenetic analysis shows
that the isolate from Atlantic herring and silvery pout are closely related. All positive fish were sampled in the same area in
the northern county of Finnmark. This is the first detection of VHSV in Atlantic herring this far north, and to our knowledge
the first detection of VHSV in silvery pout. However, low prevalence of VHSV genotype Ib in Atlantic herring and other wild
marine fish are well known in other parts of Europe. Earlier there have been a few reports of disease outbreaks in farmed
rainbow trout with VHSV of genotype Ib, and our results show that there is a possibility of transfer of VHSV from wild to
farmed fish along the Norwegian coast line. The impact of VHSV on wild fish is not well documented.
Spatio-temporal risk factors for viral haemorrhagic septicaemia (VHS) in Danish aquaculture

Viral haemorrhagic septicaemia (VHS) is an economically very important fish disease in the northern hemisphere. When the VHS virus was first isolated in Denmark 50 yr ago, more than 80% of the 800 Danish fish farms were considered to be infected, but vigilant surveillance and eradication programmes led to a drastic reduction in prevalence, and finally, to complete eradication of VHS. Denmark thus obtained official status as an approved VHS-free member state within the European Union in November 2013. Data on outbreaks within the country have been collected since 1970, and here we combined these data with the geographical coordinates of fish farms to identify clusters of high disease prevalence and other risk factors. Our analyses revealed a statistically significant cluster in the southwestern part of the country, which persisted throughout the study period. Being situated within such a cluster was a significant risk factor for VHS. For freshwater rainbow trout farms situated inland, the number of upstream farms was a determining risk factor for VHS, as was distance to the nearest VHS-infected farm and year. Whether the farm used fresh or marine water in production did not have any influence on the risk of VHS, when accounting for whether the farm was situated inside a cluster of high risk. This information can be used when implementing risk-based surveillance programmes.

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, Technical University of Denmark, University of Southern Denmark, Danish Veterinary and Food Administration
Number of pages: 11
Pages: 87-97
Publication date: 2014
Peer-reviewed: Yes

Publication information
Journal: Diseases of Aquatic Organisms
Volume: 109
Issue number: 2
ISSN (Print): 0177-5103
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.7 SJR 0.675 SNIP 0.95
Web of Science (2017): Impact factor 1.543
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.95 SJR 0.893 SNIP 0.92
Web of Science (2016): Impact factor 1.549
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.96 SJR 0.973 SNIP 0.943
Web of Science (2015): Impact factor 1.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.86 SJR 0.895 SNIP 0.889
Web of Science (2014): Impact factor 1.752
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.77 SJR 0.831 SNIP 0.928
Web of Science (2013): Impact factor 1.586
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.04 SJR 0.919 SNIP 1.092
Web of Science (2012): Impact factor 1.734
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.29 SJR 1.12 SNIP 1.164
Web of Science (2011): Impact factor 2.201
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.918 SNIP 0.948
Web of Science (2010): Impact factor 1.572
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.897 SNIP 0.985
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.865 SNIP 0.995
Scopus rating (2007): SJR 0.951 SNIP 1.05
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.875 SNIP 0.966
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.909 SNIP 1.033
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.992 SNIP 1.097
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.942 SNIP 1.188
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.199 SNIP 1.217
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.35 SNIP 1.193
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.16 SNIP 1.215
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.193 SNIP 1.139
A multiplex Real Time RT-PCR for genotyping of VHSV

General information
State: Published
Organisations: Section for Virology, National Veterinary Institute, University of Santiago de Compostela
Contributors: Vázquez, D., López-Vázquez, C., Skall, H. F., Mikkelsen, S. S., Olesen, N. J., Dopazo, C. P.
Pages: 150
Publication date: 2013

Host publication information
Title of host publication: 16th International Conference on Diseases of Fish and Shellfish : Abstract Book
Publisher: European Association of Fish Pathologists
Article number: O-141
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2013

Atlantic herring shows high mortality rate in bath challenge with viral haemorrhagic septicaemia virus (VHSV)

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, National Veterinary Institute, Institute of Marine Research
Number of pages: 1
Publication date: 2013
Peer-reviewed: Yes
Event: Abstract from 17th Annual Workshop of the National Reference Laboratories for Fish Diseases, Copenhagen, Denmark.
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Development and validation of a novel Taqman-based real-time RT-PCR assay suitable for demonstrating freedom from viral haemorrhagic septicaemia virus

Viral haemorrhagic septicaemia (VHS) is a serious disease in several fish species. VHS is caused by the rhabdovirus viral haemorrhagic septicaemia virus (VHSV). To prevent spreading of the pathogen, it is important to use a fast, robust, sensitive and specific diagnostic tool to identify the infected fish. Traditional diagnosis based on isolation in cell culture followed by identification using, for example, ELISA is sensitive and specific but slow. By switching to RT-PCR for surveillance and diagnosis of VHS the time needed before a correct diagnosis can be given will be considerably shortened and the need for maintaining expensive cell culture facilities reduced. Here we present the validation, according to OIE guidelines, of a sensitive and specific Taqman-based real-time RT-PCR. The assay detects all isolates in a panel of 79 VHSV isolates covering all known genotypes and subtypes, with amplification efficiencies of approximately 100%. The analytical and diagnostic specificity of the real-time RT-PCR is close to 1, and the analytical and diagnostic sensitivity is comparable with traditional cell-based methods. In conclusion, the presented real-time RT-PCR assay has the necessary qualities to be used as a VHSV surveillance tool on par with cell culture assays.

General information
State: Published
Organisations: National Veterinary Institute, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases, Section for Virology
Contributors: Jonstrup, S. P., Kahns, S., Skall, H. F., Boutrup, T. S., Olesen, N. J.
Pages: 9-23
Publication date: 2013
Peer-reviewed: Yes

Publication information
Journal: Journal of Fish Diseases
Volume: 36
Issue number: 1
ISSN (Print): 0140-7775
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Impact factor 2.056
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
Web of Science (2013): Impact factor 1.507
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.7
Web of Science (2012): Impact factor 1.591
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.09
Web of Science (2011): Impact factor 2
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Impact factor 1.603
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Web of Science (2008): Indexed yes
Web of Science (2007): Indexed yes
Web of Science (2006): Indexed yes
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
Web of Science (2003): Indexed yes
Web of Science (2001): Indexed yes
Web of Science (2000): Indexed yes
Original language: English
DOIs:
10.1111/j.1365-2761.2012.01416.x
Research output: Research - peer-review › Journal article – Annual report year: 2013
Draft EURL Workplan for 2014

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology
Contributors: Olesen, N. J., Nicolajsen, N., Ojala, A., Mikkelsen, S. S., Vendramin, N.
Number of pages: 1
Publication date: 2013
Peer-reviewed: Yes
Event: Abstract from 17th Annual Workshop of the National Reference Laboratories for Fish Diseases, Copenhagen, Denmark.
Electronic versions:
3 Draft EURL WORKPLAN FOR 2014 .pdf
Source: dtu
Source-ID: u::10120
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

EURL activities in 2012

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology
Contributors: Olesen, N. J., Vendramin, N., Nicolajsen, N.
Number of pages: 1
Publication date: 2013

Host publication information
Title of host publication: 16th Annual Meeting of the National Reference Laboratories for Fish Diseases
Electronic versions:
1 EURL activities in 2012.pdf

Bibliographical note
Oral presentation.
Source: dtu
Source-ID: u::10118
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2013

EURL Workplan for 2013

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology
Contributors: Olesen, N. J., Nicolajsen, N., Ojala, A., Mikkelsen, S. S., Vendramin, N.
Number of pages: 2
Publication date: 2013
Peer-reviewed: Yes
Event: Abstract from 17th Annual Workshop of the National Reference Laboratories for Fish Diseases, Copenhagen, Denmark.
Electronic versions:
prod11387369254464.2_EURL_WORKPLAN_FOR_2013_.pdf
Source: dtu
Source-ID: u::10119
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

European herring shows high mortality rate in bath challenge with viral haemorrhagic septicaemia virus (VHSV)

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, National Veterinary Institute, Institute of Marine Research
Number of pages: 1
Pages: 276
Publication date: 2013
Fishpathogens.eu/noda: A free and handy online platform for betanodavirus targeted research and data sharing

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology
Contributors: Panzarin, V., Mikkelsen, S. S., Jonstrup, S. P., Bigarré, L., Baud, M., Gray, T., Agapow, P. M., Olesen, N. J.
Pages: 186
Publication date: 2013

Molecular tracing of viral pathogens in aquaculture - A multidisciplinary Trans-European research project

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, National Veterinary Institute, Agence nationale de la sécurité sanitaire, alimentation, environnement et travail, Friedrich-Loeffler-Institute, IFREMER, IRD, Norwegian Computing Center
Pages: 159
Publication date: 2013

Molecular tracing of viral pathogens in aquaculture - A multidisciplinary trans-European research project

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, National Veterinary Institute, Agence nationale de la sécurité sanitaire, alimentation, environnement et travail, Friedrich-Loeffler-Institute, IFREMER, IRD, Norwegian
Report on EURL training course 2013

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology
Contributors: Olesen, N. J., Vendramin, N., Mikkelsen, S. S.
Number of pages: 2
Publication date: 2013

Publication information
Original language: English
Electronic versions:
training_course_report2013.pdf
Research output: Research › Report – Annual report year: 2013

Results of the Proficiency Test, PT1 and PT2, 2012
A comparative test of diagnostic procedures was provided by the European Union Reference Laboratory (EURL) for Fish Diseases. The test was divided into proficiency test 1 (PT1) and proficiency test 2 (PT2).

The number of National Reference Laboratories (NRLs) participating in PT1 and PT2 was 43.

The tests were sent from the EURL in the beginning of September 2012. Both PT1 and PT2 are accredited by DANAK under registration number 515 for proficiency testing according to the quality assurance standard DS/EN ISO/IEC 17043.

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology
Contributors: Vendramin, N., Nicolajsen, N., Christophersen, M., Olesen, N. J.
Number of pages: 2
Publication date: 2013
Peer-reviewed: Yes
Event: Abstract from 17th Annual Workshop of the National Reference Laboratories for Fish Diseases, Copenhagen, Denmark.
Electronic versions:
prod11387369089745.5_Proficiency_test_niven.pdf

Bibliographical note
Oral presentation.
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Risiko for Epizootisk Ulcerativt Syndrom hos danske fisk: Nyt fra Veterinærinstituttet

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology
Contributors: Boutrup, T. S., Skall, H. F., Olesen, N. J.
Number of pages: 1
Pages: 43
Publication date: 2013
Peer-reviewed: Yes
Susceptibility of various Japanese freshwater fish species to an isolate of viral haemorrhagic septicaemia virus (VHSV) genotype IVb

Genotype IVb of viral haemorrhagic septicaemia virus (VHSV) was isolated for the first time in the Great Lakes basin in 2003, where it spread and caused mass mortalities in several wild fish species throughout the basin. In order to prevent further spreading of the disease and to assess risks of new genotypes invading new watersheds, basic microbiological information such as pathogenicity studies are essential. In this study, experimental infections were conducted on 7 indigenous freshwater fish species from Japan by immersion with a VHSV genotype IVb isolate. In Expt 1, cumulative mortalities in bluegill Lepomis macrochirus used as positive controls, Japanese fluvial sculpin Cottus pollux, and iwana Salvelinus leucomaenis pluvius were 50, 80 and 0%, respectively. In Expt 2, cumulative mortalities of 100, 100 and 10% were observed in Japanese fluvial sculpin C. pollux, Japanese rice fish Oryzias latipes and yoshinobori Rhinogobius sp., respectively. No mortality was observed in honmoroko Gnathopogon caerulescens, akaza Liobagrus reini or Japanese striped loach Cobitis biwae. VHSV was detected by RT-PCR from samples of kidney, spleen, and brain from all dead fish, and virus re-isolation by cell culture was successful from all dead fish. We detected the virus in the brain from a few surviving bluegill 50 d post exposure by both cell culture and RT-PCR. These results revealed that VHSV IVb could become a serious threat to wild freshwater fish species in Japan, and that some surviving fish might become healthy carriers of the virus.
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.7 SJR 0.675 SNIP 0.95
Web of Science (2017): Impact factor 1.543
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.95 SJR 0.893 SNIP 0.92
Web of Science (2016): Impact factor 1.549
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.96 SJR 0.973 SNIP 0.943
Web of Science (2015): Impact factor 1.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.86 SJR 0.895 SNIP 0.889
Web of Science (2014): Impact factor 1.752
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.77 SJR 0.831 SNIP 0.928
Web of Science (2013): Impact factor 1.586
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.04 SJR 0.919 SNIP 1.092
Web of Science (2012): Impact factor 1.734
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.29 SJR 1.12 SNIP 1.164
Web of Science (2011): Impact factor 2.201
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.918 SNIP 0.948
Web of Science (2010): Impact factor 1.572
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.897 SNIP 0.985
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.865 SNIP 0.995
Scopus rating (2007): SJR 0.951 SNIP 1.05
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.875 SNIP 0.966
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.909 SNIP 1.033
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.992 SNIP 1.097
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.942 SNIP 1.188
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.199 SNIP 1.217
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.35 SNIP 1.193
Web of Science (2001): Indexed yes
Trade practices are main factors involved in the transmission of viral haemorrhagic septicaemia

Viral haemorrhagic septicaemia (VHS), caused by the novirhabdovirus viral haemorrhagic septicaemia virus (VHSV), causes significant economic problems to European rainbow trout, Oncorhynchus mykiss (Walbaum), production. The virus isolates can be divided into four distinct genotypes with additional subgroups. The main source of outbreaks in European rainbow trout farming is sublineage Ia isolates. Recently, this group of isolates has been further subdivided in to two subclades of which the Ia-2 consists of isolates occurring mainly in Continental Europe outside of Denmark. In this study, we sequenced the full-length G-gene sequences of 24 VHSV isolates that caused VHS outbreaks in Polish trout farms between 2005 and 2009. All these isolates were identified as genotype Ia-2; they divided however into two genetically distinct subgroups, that we name Pol I and Pol II. The Pol I isolates mainly caused outbreaks in the southern part of Poland, while Pol II isolates predominantly were sampled in the north of Poland, although it seems that they have been transmitted to other parts of the country. Molecular epidemiology was used for characterization of transmission pathways. This study shows that a main cause of virus transmission appears to be movement of fish. At least in Polish circumstances trading practices appear to have significant impact on spreading of VHSV infection.

General information
State: Published
Organisations: National Veterinary Institute, Section for Virology, National Veterinary Research Institute
Contributors: Reichert, M., Matras, M., Skall, H. F., Olesen, N. J., Kahns, S.
Pages: 103-114
Publication date: 2013
Peer-reviewed: Yes

Publication information
Journal: Journal of Fish Diseases
Volume: 36
Issue number: 2
ISSN (Print): 0140-7775
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Impact factor 2.056
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
Web of Science (2013): Impact factor 1.507
Diagnostic capacity for viral haemorrhagic septicaemia virus (VHSV) infection in rainbow trout (Oncorhynchus mykiss) is greatly increased by combining viral isolation with specific antibody detection

Detection of disease specific antibodies in farmed rainbow trout (Oncorhynchus mykiss) has been proposed as an alternative or supplement to the currently approved procedures for diagnosis and surveillance in this species. In samples from natural outbreaks of the disease viral haemorrhagic septicaemia (VHS) at two freshwater farms in southern Denmark
serologic testing was used to broaden the diagnostic window from outbreak to diagnosis in the laboratory as compared to traditional procedures of isolation and identification of the virus. The serologic assay clearly increased the chance of detecting present or previous infections where the pathogen could not be isolated by standard methods (indicating older infections where the virus had been cleared). Our data allowed us to monitor the levels of neutralising antibodies in relation to the presence of the virus in fish experiencing two different types of outbreaks at two different farms. By sequence analysis of the viral glycoprotein from selected isolates we found no evidence for escape mutants having developed in the fish showing high titres of neutralising antibodies.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Danish Veterinary and Food Administration
Contributors: Schyth, B. D., Ariel, E., Korsholm, H., Olesen, N. J.
Pages: 593-597
Publication date: 2012
Peer-reviewed: Yes

Publication information
Journal: Fish and Shellfish Immunology
Volume: 32
Issue number: 4
ISSN (Print): 1050-4648
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 3.37 SJR 1.126 SNIP 1.103
Web of Science (2017): Impact factor 3.185
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.36 SJR 1.128 SNIP 1.142
Web of Science (2016): Impact factor 3.148
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.19 SJR 1.265 SNIP 1.16
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.92 SJR 1.14 SNIP 1.098
Web of Science (2014): Impact factor 2.674
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.11 SJR 0.997 SNIP 1.138
Web of Science (2013): Impact factor 3.034
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.02 SJR 1.156 SNIP 1.169
Web of Science (2012): Impact factor 2.964
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.52 SJR 1.209 SNIP 1.262
Web of Science (2011): Impact factor 3.322
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.143 SNIP 1.06
EURL activities in 2011
The duties of the EURL are described in Council Directive 2006/88/EC (Annex VI). The duties mainly concern fish diseases listed as exotic diseases: EHN and EUS; and fish diseases listed as non-exotic diseases: ISA, VHS, IHN, and KHV disease.

General information
State: Published
Organisations: National Veterinary Institute, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases
Contributors: Olesen, N. J., Skall, H. F., Nicolajsen, N., Jonstrup, S. P., Kahns, S.
Number of pages: 1
Publication date: 2012

Host publication information
Title of host publication: 16th Annual Meeting of the National Reference Laboratories for Fish Diseases
Electronic versions: 1_EURL_activities_2011.pdf
Research output: Research - peer-review ◄ Conference abstract in proceedings – Annual report year: 2012

EURL workplan for 2012
The functions and duties of the European Union Reference Laboratory for Fish Diseases (EURL) are described in the Council Directive 2006/88/EF Annex VI part I.

General information
State: Published
Organisations: National Veterinary Institute, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases
Contributors: Olesen, N. J., Nicolajsen, N., Mikkelsen, S. S., Christophersen, M., Vendramin, N.
Number of pages: 2
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European freshwater VHSV genotype Ia isolates divide into two distinct subpopulations

Viral haemorrhagic septicaemia (VHS), caused by the novirhabdovirus VHSV, often leads to significant economic losses to European rainbow trout production. The virus isolates are divided into 4 distinct genotypes with additional subgroups including sublineage Ia, isolates of which are the main source of outbreaks in European rainbow trout farming. A significant portion of Danish rainbow trout farms have been considered endemically infected with VHSV since the first disease outbreak was observed in the 1950s. However, following a series of sanitary programs starting in 1965, VHSV has not been detected in Denmark since January 2009. Full-length G-genes of all Danish VHSV isolates that were submitted for diagnostic analyses in the period 2004–2009 were sequenced and analysed. All 58 Danish isolates from rainbow trout grouped with sublineage Ia isolates. Furthermore, VHSV isolates from infected Danish freshwater catchments appear to have evolved into a distinct clade within sublineage Ia, herein designated clade Ia-1, whereas trout isolates originating from other continental European countries cluster in another distinct clade, designated clade Ia-2. In addition, phylogenetic analyses indicate that VHSV Ia-1 strains have caused a few outbreaks in Germany and the UK. It is likely that viruses have been transmitted from infected site(s) out of the Danish environment, although a direct transmission pathway has not been identified. Furthermore, VHSV Ia-2 isolates seem to have been transmitted to Denmark at least once. Interestingly, one viral isolate possibly persisted in a Danish watershed for nearly 4 yr without detection whereas other subclades of VHSV isolates appear to have been eliminated, probably because of implemented eradication procedures.

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Organisations: National Veterinary Institute, Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, Division of Epidemiology and Microbial Genomics, Center for Systems Microbiology, National Food Institute, Division of Microbiology and Risk Assessment, Danish Veterinary and Food Administration, Cefas Weymouth Laboratory
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Web of Science (2016): Impact factor 1.549
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Web of Science (2015): Indexed yes
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Scopus rating (2014): CiteScore 1.86 SJR 0.895 SNIP 0.889
Web of Science (2014): Impact factor 1.752
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
First Detection of Hirame Rhabdovirus (HIRRV) in Europe

Introduction

Hirame rhabdovirus (HIRRV) is one of the four recognized species within the Novirhabdovirus genus, represented by the type species Infectious Haematopoietic Necrosis (IHNV). HIRRV was first isolated during an outbreak on cultured flounder (Paralichthys olivaceus) and ayu (Plecoglossus altivelis) in Japan (1). It was also found on other marine fish in Asia, such as stone flounder (Kareius bicoloratus) in China (2). Furthermore, it was shown to be pathogenic for a range of salmonids.
species, including rainbow trout, experimentally challenged in freshwater. The major clinical signs of HIRRV infection were congestion of the gonads, focal hemorrhages of the skeletal muscle and fins and ascitic fluid collection (3). We report the first description of HIRRV in Europe, isolated from grayling and brown trout in a farm in Poland.

Materials & methods

Thirty adult graylings (Thymallus thymallus) with clinical signs and thirty asymptomatic adult brown trouts (Salmo trutta m. fario) from the same farm in Poland were tested for the presence of novirhabdoviruses by cell culture. Pools of kidney and spleen from a maximum of 10 fish were homogenized. For virus propagation, epithelioma papulosum cyprini (EPC), fathead minnow (FHM), rainbow trout gonad (RTG) and bluegill fry (BF-2) cell lines were inoculated and incubated at 15°C. Cell cultures were collected for virus identification when cytopathic effect (CPE) appeared, usually 4 to 7 d later. Starting from RNA extracted from cell culture supernatant, a random-priming sequence-independent single primer amplification (SISPA) was adopted to search for viral sequences (4). PCR products were cloned and sequenced according to the Sanger method.

Transmission studies were carried out on rainbow trout (Oncorhynchus mykiss) fry and grayling fry. Virus was propagated in EPC cells and a harvested at maximum CPE, about 4-5 days post inoculation (dpi). Experimental fish were kept in 10 l aquaria supplied with freshwater, the temperature was maintained at 10 or 12°C.

Results

After inoculation on various cell lines, the homogenates from graylings induced a strong cytopathic effect (CPE) after 72 hours, suggesting the presence of a virus. The virus isolated in cell culture induced mortalities on experimentally infected graylings, reaching 10-25% after 21 days. In moribund graylings, light petechiae and congestions in rump muscles and also in internal organs were observed. Although some antigenic similarities with perch rhabdovirus (PRhV) were observed, RT-PCR with several sets of generic primers amplifying all fish vesiculo-like viruses, gave consistently negative results. Therefore, we used a sequence independent single primer amplification (SISPA) strategy to obtain and identify viral genomic fragments with similarities to other viruses in GenBank. Surprisingly, of the 60 clones sequenced, two of them showed high sequence similarities (>99%) with either the L gene or the N gene of HIRRV, a viral species that had been reported only in Japan, China and Korea till now. By amplifying specifically the P gene, we observed that the virus exhibited a higher identity with the Chinese strain compared to the Korean, suggesting that the virus was imported from China, maybe in frozen food. A specific qPCR was developed and used to demonstrate that the same virus was also present in cell culture inoculated with brown trouts extracts from the same farm.

Discussion & conclusions

This study identified for the first time the presence of HIRRV in grayling and brown trouts in a farm in fresh water in Europe. The European isolate was highly similar to two other Asiatic strains, from Korean and China. Meanwhile, the sequence of the P gene revealed a stronger similarity with the Chinese strain, which would be consistent with the hypothesis of the introduction of the virus via frozen food imported from China and used in the farm. This finding raises concerns about the spread of this virus out of Asiatic countries and its potential emergence in freshwater conditions. Any symptom was visible on the graylings and brown trouts from the affected farm, suggesting a latent infection. However, the virus, once produced in cell culture, provoked mortalities during an infectious challenge on graylings and rainbow trouts. The conditions of virulence should be further investigated to estimate the epizootic risks in Europe on grayling and other freshwater fish. It must be mentioned that at the same period of viral isolation, a massive mortality occurred on wild grayling in a river in the same region. Although no samples could be analyzed at that time, the possibility of an HIRRV outbreak is hypothesized. We now have the specific diagnostic tools for routine surveillance and investigation of any other mortality event.

General information

State: Published
Organisations: National Veterinary Institute, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases, National Veterinary Research Institute, ANSES - French Agency for Food, Environmental and Occupational Health & Safety
Contributors: Borzym, E., Matras, M., Maj, J., Sandomierska, A., Olesen, N. J., Eliassen, M., Baud, M., Talbi, C., Bigarré, L.
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1_2_HIRRV_abstract_Arhus_2.pdf
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Health Categorisation of Fish Farms in Europe in 2011

The Questionnaire on Surveillance and Diagnosis (S&D) included questions on how fish farms are health categorised according to Council Directive 2006/88/EC in the respective countries. More than half of the authorised farms in Europe are in category III for VHS and IHN and the remaining in category I or II. According to these official data almost no farms are infected with either of these diseases. This might be more due to a significant underreporting than of the de facto situation. For KHV most carp farms are in category III, unknown status. Many farms in Europe are not categorised yet, and unfortunately the situation have not improved much from 2010. In the
questionnaire we ask for the number of APBs in these areas. There are several different views on how categorisation shall be performed, e.g. should VHS free marine rainbow trout farms be placed in Category III or I? If Isavirus HPR0 is found in or in proximity of a farm can it remain its Category I status? Some Member states do not include registered APBs in the categorisation but according to 2006/88/EC Annex III health categorisation comprise Member states, zone and compartments NOT single APBs. A new Animal Health Law is under preparation and revision and will now include aquatic animals; in this connection the categorisation system might be simplified and be made more transparent.

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Contributors: Olesen, N. J., Nicolajsen, N.
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Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Inactivation of VHSV by Percolation and Salt Under Experimental Conditions
At the moment the only legal method in Denmark to sanitize wastewater from fish cutting plants is by percolation. To evaluate the inactivation effect of percolation on VHSV an experimental examination was initiated. A column packed with gravel as top- and bottom layer (total of 22 cm) and a mid layer consisting of dug sand (76 cm) was used for the trial. Over a period of 18 h 3.9 x 1010 TCID50 VHSV was supplied to the column, where after normal tap water was supplied for the rest of the trial period, in total 7 days. During the 7 days samples for virological examination was taken. The sampling was most intensive in the period where the risk of VHSV breaking through the column was highest. The sensitivity of the virological examination was 13.9 TCID50/ml and no virus was isolated. A reduction of VHSV > 4 log in the outlet water was seen. This experiment suggests that percolation can be a valuable method to sanitize VHSV infected water. Changes in temperature, pH, earth types in the area used for percolation etc. may change the virus reduction, though.

As some of the fish cutting plants are also smoking rainbow trout fillets, the question arose whether a brine solution will inactivate VHSV. In order to answer this question a small trial was set up. VHSV and NaCl was added to cell culture medium with 10% foetal bovine serum, in order to mimic a “dirty” environment, to obtain from 1.9% to 20.9% NaCl and kept in the dark at 4°C. Samples were titrated after 5 min, 1 h and 20 h. No reduction in titer was observed in any of the samples.

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Organisations: National Veterinary Institute, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases, DHI Denmark
Contributors: Skall, H. F., Olesen, N. J., Jørgensen, C.
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Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Molecular Tracing of Viral Pathogen in Aquaculture (MOLTRAQ): a new EMIDA project
Here we present a new research-project funded under the EMIDA-ERA Net under the EU 7th Framework program (For more details about EMIDA: www.emida-era.net).

The purpose of the project is to increase knowledge on transmission, prevention and control of viral diseases in aquaculture and develop a generic approach to viral disease control by using information on epidemiological and phylogenetic attributes from several important aquatic animal viruses.

The project will i) generate and use spatio-temporal epidemiological data, phylogeographic data and gene expression data for important host-viral pathogen systems to identify important factors affecting the spread of diseases in aquaculture, and ii) integrate these in scenario simulation models to assess effects of various control strategies for selected host-pathogen systems.


Partners into the project are: Norwegian Veterinary Institute (NO, Coordinator), Technical University of Denmark-National
Veterinary Institute (DK), Agence Nationale de Sécurité Sanitaire (FR), Friedrich-Loeffler Institut (DE), Institut Francais de Recherche pour l’Exploitation de la Mer (FR), Institut de Recherche pour le Développement (FR) and Norwegian Computing Center (NO).

The project began on April 1st, 2012, and will run until March 31st, 2015. The total budget is 1.9€, of which 1.4€ is funded via the EMIDA-ERA Net.

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Organisations: National Veterinary Institute, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases, National Veterinary Institute, Norwegian Computing Center, IRD, Friedrich-Loeffler-Institute, Agence nationale de la sécurité sanitaire, alimentation, environnement et travail, IFREMER
Contributors: Jensen, B. B., Aldrin, M., Avarre, M. C., Bergmann, S. M., Bigarre, L., Brun, E., Jansen, P. A., Olesen, N. J., Renault, T., Schuetze, H.
Number of pages: 1
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Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

**Outcome on EPIZONE Extension on VER/ VNN: Diagnostics, proficiency test and qRT-PCR validation**

**Introduction**
Betanodaviruses are genetically very diverse with at least five genogroups described and a large range of variants within each group, including reassortants carrying components of two groups (Panzarin et al., 2011; Toffolo et al., 2007). Their genome is composed of two strands of RNA: RNA1 and RNA2. Till now, only one universal real-time RT-PCR method has been published which detects all variants of RNA2 (Panzarin et al., 2010) in clinical cases. An additional method based on detection of RNA1 would be useful to confirm results obtained from RNA2. Another advantage of detecting RNA1 is to bring valuable genetic information on the second genome component of a given isolate. ANSES has developed new DNA probes targeting RNA1 with the goal of detecting all genotypes of nodaviruses. The aim of the project is thus:
- To organize, conduct and report an inter-laboratory proficiency test for detection of aquatic nodaviruses by real time RT-PCR targeting RNA1 and RNA2, respectively.
- To test a newly developed real-time RT-PCR targeting RNA1: sensitivity, specificity, range of detection and genetic information provided by sequencing the PCR product.

**Materials & methods**
Primers and probes specific for RNA 1 and RNA2 were ordered by ANSES and aliquots from the same batch were provided to all partners. IZSVe produced for all partners 10 samples (1-11) of inactivated isolates produced in cell culture and covering 4 genogroups. The samples were forwarded by ANSES and RNA had to be extracted by each partner. In the meantime, ANSES produced and distributed RNA extracted from healthy or infected fish (2 genogroups), or cell culture; one sample from cell culture had to be serially diluted to test the sensitivity of each method in partners’ hands. Samples were tested in duplicates and the mean Ct values reported.

**Results**
A total of 192 virus-containing samples were tested (negative controls excluded), implicating 5 partners performing each two or four methods (16 tubes with virus * 12 methods). For each genetic component (RNA1 or RNA2), the same ratio of detection (80 / 96) was found, indicating that both RNA1 and RNA2 probes are globally equivalent for detection of all genotypes. When the samples sent were considered, the rate of false positives was 5.5% (2/36) and the rate of false negative 13.5% (31/228). Both RNA1 and RNA2 proved to be valuable targets for viral detection, with advantages and disadvantages depending on the method and the viral isolates.

**Conclusions**
Both sets of the nodavirus probes proved to be useful for detection of betanodaviruses in each lab’s usual conditions. Ideally, both RNA should be targeted for samples exhibiting high Ct values (for instance in healthy carriers) to confirm the presence of low loads of virus.

**General information**
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Organisations: National Veterinary Institute, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases, Agence nationale de la sécurité sanitaire, alimentation, environnement et travail, Instituto Zooprofilattico Sperimentale delle Venezie, National Veterinary Institute, Central Veterinary Institute
Number of pages: 2
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**Host publication information**
Title of host publication: 16th Annual Meeting of the National Reference Laboratories for Fish Diseases
Overview of the Disease Situation and Surveillance in Europe in 2011

The Questionnaire on Surveillance and Diagnosis (S&D) which is collated annually is the only comprehensive overview of the disease situation in aquaculture in Europe. The information has been made available on the EURL web site (www.eurl-fish.eu), where all raw data can be obtained. The S&D have evolved over the years, for 2011 it comprise 4 parts:

2. Epidemiological data on the disease situation in each Member State with focus on the listed diseases but also including other diseases of interest.
3. Laboratory data from the NRLs and other laboratories, including number of samples examined, diagnoses of fish diseases made.
4. Status on implementation of the new fish health surveillance legislation.

A new part was included for 2011 as a deliverable for the EFSA project CFP/EFSA/AHAW/2011/03: Risk categorisation for Aquatic Animal Health Surveillance.

Concerning the epidemiological data, obviously, there is still a severe underreporting of VHS and IHN in many countries. For VHS the infection status is only known for 33% of the farms, for IHN the situation is known in 37% of the farms. While for KHV the disease situation is unknown on 95% of the farms! For farms producing Atlantic salmon and categorised for ISA, the infection status for ISA is known for 49% of the farms. The findings of Isavirus HPR0 pose some problems regarding the health categorisation of salmon farms.

Many countries have surveillance programmes for SVC (16 of 35 countries), BKD (14 of 35 countries), IPN (18 of 35 countries) and Gyrodactylus salaries (8 of 35 countries), for which they are seeking “additional guaranties” according to §42 in CD 2006/88/EC. The number of farms in the programmes varies from very few farms to many farms. There are very large differences between countries on how many samples are tested on cell cultures, ranging from < 100 to several thousands. PCR is coming up in many countries, and the large number of PCR-tests conducted in some countries mostly reflects the KHV and ISA testing.

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Contributors: Olesen, N. J., Nicolajsen, N.
Number of pages: 2
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Results of the Proficiency Test, PT1 and PT2, 2011
A comparative test of diagnostic procedures was provided by the EU Reference Laboratory (EURL) for Fish Diseases to 41 National Reference Laboratories (NRLs) in the start of middle of October 2011. The test was prepared and tested according to protocols accredited by DANAK under registration number 515 to proficiency testing according to the quality assurance standard DS/EN ISO/IEC 17043. The test consisted of 2 tests: PT1 and PT2.

General information
State: Published
Typing of viral hemorrhagic septicemia virus by monoclonal antibodies

Seven mAbs with specific reaction patterns against each of the four genotypes and eight subtypes of viral hemorrhagic septicemia virus (VHSV) were produced, aiming to establish an immunoassay for typing VHSV isolates according to their genotype. Among the mAbs, VHS-1.24 reacted with all genotypes except genotype Ie, whilst mAb VHS-9.23 reacted with all genotypes except genotype III. mAb VHS-3.80 reacted with genotypes Ib, Ic, Id and II. mAb VHS-7.57 reacted with genotypes II and IVa, and mAb VHS-5.18 with genotype Ib only. Interestingly, mAb VHS-3.75 reacted with all of the genotype III isolates except a rainbow trout-pathogenic isolate from the west coast of Norway, and reacted in addition with the IVb isolate, CA-NB00-01, from the east coast of the USA. Finally, mAb VHS-1.88 reacted with all genotype IVb isolates from the Great Lakes, but not with CA-NB00-01. In conclusion, we can distinguish between all four genotypes and between five of eight subtypes of VHSV by testing isolates in immunoassay using a panel of nine mAbs. By Western blotting and transfection of cell cultures, it was shown that mAb VHS-1.24 recognized an epitope on the viral phosphoprotein (P), whilst all others recognized antigenic determinants on the nucleoprotein (N). From amino acid alignments of the various genotypes and subtypes of VHSV isolates, it was possible to determine the epitope specificity of mAb VHS-1.24 to be aa 32–34 in the P-protein; the specificities of mAbs VHS-3.80, VHS-7.57 and VHS-3.75 were found to be aa 43 and 45–48, aa 117 and 121, and aa 103, 118 and 121 of the N-protein, respectively.

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State: Published
Organisations: National Veterinary Institute, Section for Virology, Section for Immunology and Vaccinology, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases, Fisheries Research Agency
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Web of Science (2016): Impact factor 2.838
BFI (2015): BFI-level 1
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Web of Science (2015): Impact factor 3.192
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
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Research output: Research - peer-review › Journal article – Annual report year: 2012

A global taqman based real time RT-PCR assay suitable for surveillance and diagnosis of viral haemorrhagic septicaemia virus

General information
FishPathogens.eu a new database in the research of aquatic animal diseases

We live in a world where the amount of information available is enormous. In order to keep track of the available knowledge, databases are needed to collect, store, and sort it. Www.fishpathogens.eu is a database developed and maintained by the European Union Reference Laboratory for Fish Diseases. The database was launched in June 2009 focusing on Viral Haemorrhagic Septicaemia Virus (VHSV), extended with Infectious Haemorrhagic Necrosis Virus (IHNV) in 2010, and is now being extended to include Spring Viraemia of Carp Virus (SVCV), Infectious Salmon Anemia Virus (ISAV), Betanodavirus, and Koi Herpes Virus (KHV). The database design is based on freeware and could easily be implemented to include pathogens relevant for other species than fish. We present the database using the data on the
different fish pathogens as example. However if some are interested in the platform we are happy to cooperate and share the database structure with other Epizone members.

**General information**

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Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Symantix Ltd.
Contributors: Jonstrup, S. P., Gray, T., Olesen, N. J.
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Event: Poster session presented at 15th International Conference on Diseases of Fish and Shellfish, Split, Croatia.
Electronic versions:
Fishpathogens.pdf
URLs:
http://www.fishpathogens.eu/
Source: orbit
Source-ID: 316180
Research output: Research - peer-review › Poster – Annual report year: 2011

Infectious Pancreatic Necrosis (IPN), a New Threat of Cultured Rainbow Trout in Iran

**Background:** Infectious pancreatic necrosis virus (IPNV), a member of the virus family Birnaviridae, causes an acute, contagious disease with high mortality rate in a number of economically important fish species specially salmonids. During April 2009, one Rainbow trout farm, situated in Gilan province, north of Iran, reported unusually high losses of reared rainbow trout fry with average weight of 560 mg. same mortality were reported from 4 other farms in fryes under 1 gram weight in 2010. Clinical signs included darkening, exophthalmia, distended abdomen, fecal cast and a spiral swimming motion. Cumulative mortalities were more than 90%. Water temperature was between 12 to 16°C. Alive affected fish were delivered to the virology laboratory of Inland water aquaculture institute situated in Bandar anzali for diagnostic investigation. Clinical signs, mortality levels, age and size of fish and necropsy findings suggested that IPNV might be present. The presence of virus was confirmed by virology methods with cooperation of community reference laboratory of fish disease, Arhus,Denmark. Methods and Materials: Pools of viscera from each fish whole fry were homogenized, re-suspended in medium and clarified by centrifugation at 2000 rpm for 20 minutes in 4°C. Supernatants were inoculated onto monolayers of the BF-2 and EPC cell lines in 24 well multidishes and identified by ELISA, IFAT, NT, Nested-RT-PCR and Chloroform test. The PCR product of an isolate was sequenced and the Phylogenetic tree was constructed from the sequencing data. Results: CPE was observed 24h post inoculation and IPNV identified by ELISA, IFAT, Nested-RT-PCR and Chloroform test. In neutralization test, the virus showed more closely relationship to the SP (A2) serotype. Through an analysis including to other polypeptide gene sequences deposited in Genbank, a Spanish isolate ( ATCC AJ489222.1) was found more similar to Iranian isolate. Conclusion: Serotype of aquabirnavirus isolated in this study suggesting that the original source of the virus was in Europe. This is the first isolation and identification of IPN virus from rainbow trout fry in Iran.

**General information**

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Organisations: National Veterinary Institute, Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, Islamic Azad University, Iranian Fisheries Research Organization, University of Tehran
Contributors: Ghasemi, M., Olesen, N. J., Skall, H. F., Haghighi Karsidani, S., Jonstrup, S. P., Zorriehzahra, S., Sharifpour, I., Soltani, M., Sharifrohani, M.
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Rainbow trout surviving infections of viral haemorrhagic septicemia virus (VHSV) show lasting antibodies to recombinant G protein fragments

Rainbow trout antibodies (Abs) binding to recombinant fragments (frgs) derived from the protein G of the viral haemorrhagic septicemia virus (VHSV)-07.71 strain, could be detected by ELISA (frg-ELISA) in sera from trout surviving laboratory-controlled infections. Abs were detected not only by using sera from trout infected with the homologous VHSV isolate but also with the VHSV-DK-201433 heterologous isolate, which had 13 amino acid changes. Sera from healthy trout and/or from trout surviving infectious haematopoietic necrosis virus (IHNV) infection, were used to calculate cut-off absorbances to differentiate negative from positive sera. Specific anti-VHSV Abs could then be detected by using any of the following frgs: frg11 (56–110), frg15 (65–250), frg16 (252–450) or G21-465. While high correlations were found among the ELISA values obtained with the different frgs, no correlations between any frg-ELISA and complement-dependent 50% plaque neutralization test (PNT) titres could be demonstrated. Between 4 and 10 weeks after VHSV infection, more trout
sera were detected as positives by using heterologous frg-ELISA rather than homologous PNT. Furthermore, the percentage of positive sera detected by frg11-ELISA increased with time after infection to reach 100%, while those detected by complement-dependent PNT decreased to 29.4%, thus confirming that the lack of neutralizing Abs does not mean the lack of any anti-VHSV Abs in survivor trout sera. Preliminary results with sera from field samples suggest that further refinements of the frg-ELISA could allow detection of anti-VHSV trout Abs in natural outbreaks caused by different heterologous VHSV isolates. The homologous frg-ELISA method could be useful to follow G immunization attempts during vaccine development and/or to best understand the fish Ab response during VHSV infections. The viral frgs approach might also be used with other fish species and/or viruses.

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Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, SGIT – Dept Biotecnologia Crt, INIA, Miguel Hernández University, SGIT e Dept Biotecnologia Crt, INIA, University of Leon
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Scopus rating (2016): CiteScore 3.36 SJR 1.128 SNIP 1.142
Web of Science (2016): Impact factor 3.148
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BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.19 SJR 1.265 SNIP 1.16
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.92 SJR 1.14 SNIP 1.098
Web of Science (2014): Impact factor 2.674
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.11 SJR 0.997 SNIP 1.138
Web of Science (2013): Impact factor 3.034
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
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Scopus rating (2012): CiteScore 3.02 SJR 1.156 SNIP 1.169
Web of Science (2012): Impact factor 2.964
ISI indexed (2012): ISI indexed yes
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BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.52 SJR 1.209 SNIP 1.262
Web of Science (2011): Impact factor 3.322
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Validation of a Taqman based real time RT-PCR assay suitable for surveillance and diagnosis of Viral Haemorrhagic Septicaemia Virus worldwide

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Jonstrup, S. P., Kahns, S., Skall, H. F., Boutrup, T. S., Olesen, N. J.
Publication date: 2011
Peer-reviewed: Yes
Event: Poster session presented at 15th International Conference on Diseases of Fish and Shellfish, Split, Croatia.
Electronic versions:
2011 EAFP VHS qPCR A0.pdf
Source: orbit
Source-ID: 316178
Research output: Research - peer-review → Poster – Annual report year: 2011

Viral haemorrhagic septicaemia virus (VHSV) in rainbow trout: virulence variability within genotype Ib isolates

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Fisheries Research Agency
Contributors: Ito, T., Kurita, J., Skall, H. F., Lorenzen, N., Olesen, N. J.
Publication date: 2011
Peer-reviewed: Yes
Event: Poster session presented at 15th International Conference on Diseases of Fish and Shellfish, Split, Croatia.
When geographic information meets molecular data

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Kahns, S., Jonstrup, S. P., Skall, H. F.
Publication date: 2011
Peer-reviewed: Yes
Event: Abstract from Annual Meeting of the National Reference Laboratories for Mollusc Diseases, Nantes, .
Source: orbit
Source-ID: 316192
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

An isolate and sequence database of infectious haematopoietic necrosis virus (IHNV)

In the field of fish diseases, the amount of relevant information available is enormous. Internet-based databases are an excellent tool for keeping track of the available knowledge in the field. Fishpathogens.eu was launched in June 2009 with the aim of collecting, storing and sorting data on fish pathogens. The first pathogen to be included was the rhabdovirus, viral haemorrhagic septicaemia virus (VHSV). Here, we present an extension of the database to also include infectious haematopoietic necrosis virus (IHNV). The database is developed, maintained and managed by the European Community Reference Laboratory for Fish Diseases and collaborators. It is available at http://www.fishpathogens.eu/ihnv.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Federal Research Institute for Animal Health, United States Geological Survey, Symantix Ltd.
Contributors: Jonstrup, S. P., Schuetze, H., Kurath, G., Jensen, A. B. B., Gray, T., Olesen, N. J.
Pages: 469-471
Publication date: 2010
Peer-reviewed: Yes

Publication information
Journal: Journal of Fish Diseases
Volume: 33
Issue number: 6
ISSN (Print): 0140-7775
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Impact factor 2.056
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
Comparative study of tranavirus isolates from cod (Gadus morhua) and turbot (Psetta maxima) with reference to other ranaviruses

Two iridovirus isolates recovered from cod (Gadus morhua) and turbot (Psetta maxima) in Denmark were examined in parallel with a panel of other ranaviruses including frog virus 3 (FV3), the reference strain for the genus Ranavirus. The isolates were assessed according to their reactivity in immunofluorescent antibody tests (IFAT) using both homologous and heterologous antisera and their amplification in PCR using primers targeting five genomic regions. The corresponding PCR fragments were sequenced, and the sequences obtained were used in phylogenetic analysis. In addition, the pathogenicity to rainbow trout under experimental challenge conditions was investigated. The viruses were serologically and genetically closely related to highly pathogenic ranaviruses such as European catfish iridovirus (ECV), European sheatfish iridovirus (ESV) and epizootic haematopoietic necrosis virus (EHNV). The challenge trials indicate that rainbow trout fry cultured at 15A degrees C are not target species for the virus isolates in the present panel. We suggest that the two isolates belong in the genus Ranavirus and propose the name Ranavirus maxima (Rmax) for the turbot isolate.
Volume: 155
Issue number: 8
ISSN (Print): 0304-8608
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.25 SJR 0.973 SNIP 0.989
Web of Science (2017): Impact factor 2.16
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.16 SJR 0.969 SNIP 0.896
Web of Science (2016): Impact factor 2.058
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.16 SJR 1.098 SNIP 0.889
Web of Science (2015): Impact factor 2.255
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.37 SJR 1.098 SNIP 1.028
Web of Science (2014): Impact factor 2.39
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.26 SJR 1.009 SNIP 0.955
Web of Science (2013): Impact factor 2.282
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.12 SJR 0.891 SNIP 0.939
Web of Science (2012): Impact factor 2.03
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.17 SJR 0.902 SNIP 1.044
Web of Science (2011): Impact factor 2.111
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.013 SNIP 0.977
Web of Science (2010): Impact factor 2.209
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.915 SNIP 0.921
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.892 SNIP 1.011
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.881 SNIP 0.917
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.849 SNIP 0.972
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.898 SNIP 1.009
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.79 SNIP 0.945
Scopus rating (2003): SJR 0.81 SNIP 1.059
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.737 SNIP 0.897
Scopus rating (2001): SJR 0.752 SNIP 0.884
Web of Science (2001): Indexed yes
Development of a monoclonal antibody against viral haemorrhagic septicaemia virus (VHSV) genotype IVa

The viral haemorrhagic septicaemia virus (VHSV) comprises 4 major genotypes and a number of subtypes with, in most cases, distinct geographical distribution. A quick and simple detection method that can discriminate the different genotypes is desirable for a quick and more efficient prevention of the spread of genotypes to new geographical areas. A monoclonal antibody (MAb) against VHSV genotype IVa was produced, with the aim of providing a simple method of discriminating this genotype from the other VHSV genotypes (I, II, III and IVb). Balb/c mice were injected with purified VHSV-JF00Ehil (genotype IVa) from diseased farmed Japanese flounder. Ten hybridoma clones secreting monoclonal antibodies (MAbs) against VHSV were established. One of these, MAb VHS-10, reacted only with genotype IVa in indirect fluorescent antibody technique (IFAT) and ELISA. Using cell cultures that were transfected with each of the viral protein genes, it was shown that the MAb VHS-10 recognizes a nonlinear genotype IVa-specific epitope on the VHSV N-protein.
Development of a real-time-RT-PCR suitable for the detection of Viral Haemorrhagic Septicaemia Virus (VHSV)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Jonstrup, S. P., Kahns, S., Skall, H. F., Olesen, N. J.
Publication date: 2010
Peer-reviewed: Yes
Source: orbit
Source-ID: 265710
Research output: Research - peer-review › Poster – Annual report year: 2010
First isolation and genotyping of viruses from recent outbreaks of viral haemorrhagic septicaemia (VHS) in Slovenia
In November and December 2007, the virus causing viral haemorrhagic septicaemia (VHS) was detected in rainbow trout Oncorhynchus mykiss from 2 fish farms in Slovenia. During 2008 and 2009 the infection spread only among rainbow trout farms and 4 new outbreaks were confirmed. High mortality and clinical signs of VHS were observed among the diseased fish. VHSV was confirmed by virus isolation, immunoperoxidase test, reverse transcriptase polymerase chain reaction (RT-PCR) and phylogenetic analysis. Based on 1 complete (1524 nucleotides [nt]) and 9 partial (600 nt) glycoprotein gene nucleotide sequences, 9 VHSV isolates from the 6 VHS outbreaks were genetically closely related (99 to 100% identity), and were classified into the Subgroup I-a of Genotype I, most closely related to the German isolates Dstg21-07, Dstg36-06, and Dstg54-1-07 (99 to 100% identity). Phylogenetic analysis and epidemiological investigations confirmed that the VHS virus had been (re)introduced with imported live fish, and that subsequent outbreaks were linked to the initial infection. Our study shows that direct nucleotide sequencing of RT-PCR products, amplified from the tissue of VHSV-infected fish, represents a reliable tool for fast routine genotyping in diagnostic laboratories. This is the first report of a natural epidemic associated with VHSV infection in Slovenia since the eradication of the disease in 1977.
Fishpathogens.eu: A database based on freeware suitable for storing isolate and sequence data of pathogens

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Symantix Ltd. UK
Contributors: Jonstrup, S. P., Jones, T. G., Olesen, N. J.
Publication date: 2010
Peer-reviewed: Yes
Source: orbit
Source-ID: 268985
Research output: Research - peer-review › Journal article – Annual report year: 2010

Molecular tracing of viral haemorrhagic septicaemia viruses from Denmark provides evidence of more viral clades and cases of introduction through long distance transportation

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Kahns, S., Skall, H. F., Jonstrup, S. P., Einer-Jensen, K., Olesen, N. J.
Publication date: 2010
Peer-reviewed: Yes
Electronic versions:
Epizone_Kahns_2011_1[1].pdf
Source: orbit
Source-ID: 273824
Research output: Research - peer-review › Paper – Annual report year: 2010

Nyt fra Veterinærinstituttet: Fund af potentielt humanpatogene bakterier i fisk

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Section of Poultry Diseases
Contributors: Skall, H. F., Lassen-Nielsen, A. M., Olesen, N. J.
Pages: 24
Publication date: 2010
Peer-reviewed: Unknown

Publication information
Journal: Dansk Veterinærtidsskrift
Volume: 93
Issue number: 19
ISSN (Print): 0106-6854
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
BFI (2015): BFI-level 1
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
ISI indexed (2013): ISI indexed no
Antibody response of rainbow trout with single or double infections involving viral haemorrhagic septicaemia virus and infectious haematopoietic necrosis virus

Juvenile rainbow trout Oncorhynchus mykiss were experimentally infected by immersion with viral haemorrhagic septicaemia virus (VHSV), infectious haematopoietic necrosis virus (IHNV) or with both viruses. The presence of neutralizing antibodies in the sera of infected fish were analysed by 50% plaque neutralization tests (50%PNT). In Group 1 (infected with VHSV) and Group 2 (infected with IHNV) neutralizing antibodies were found in 41% and 21% of the serum samples, respectively. No cross-reacting antibodies were found in these 2 groups. In Group 3 (infected with both viruses) 30% of the samples showed neutralizing antibodies against VHSV, 21% against IHNV and 12% against both viruses. Fish in Group 3 developed a double specific antibody reaction whose kinetics and intensity (mean of log10 titres) were similar to the antibody response of the single infected groups.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Fregeneda-Grandes, J. M., Skall, H. F., Olesen, N. J.
Pages: 23-29
Publication date: 2009
Peer-reviewed: Yes

Publication information
Journal: Diseases of Aquatic Organisms
Volume: 83
Issue number: 1
ISSN (Print): 0177-5103
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.7 SJR 0.675 SNIP 0.95
Web of Science (2017): Impact factor 1.543
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.95 SJR 0.893 SNIP 0.92
Web of Science (2016): Impact factor 1.549
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.96 SJR 0.973 SNIP 0.943
Web of Science (2015): Impact factor 1.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.86 SJR 0.895 SNIP 0.889
Web of Science (2014): Impact factor 1.752
Contingency plans for the control and eradication of diseases in aquaculture

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Skall, H. F., Møllergaard, S., Korsholm, H., Håstein, T.
Detection of infectious pancreatic necrosis virus from rainbow trout, Oncorhynchus mykiss (Walbaum), using the macrophage lysis method

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Johansson, T., Olesen, N. J.
Pages: 563-566
Publication date: 2009
Peer-reviewed: Yes

Publication information
Journal: Journal of Fish Diseases
Volume: 32
Issue number: 6
ISSN (Print): 0140-7775
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Impact factor 2.056
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
Web of Science (2013): Impact factor 1.507
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.7
Web of Science (2012): Impact factor 1.591
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.09
Distinction of genotypes of viral haemorrhagic septicaemia virus (VHSV) by monoclonal antibodies

VHSV isolates can be divided into 4 major genotypes and a number of subtypes with an almost distinct geographical distribution. Host range and pathogenicity appear to some extent to be linked with genotypes. Once new genotypes of VHSV will be introduced into new areas, they can cause severe outbreaks of VHS among susceptible fishes. According to the OIE Aquatic Animal Health Code, even if the same disease agent is present in both the import and the export country, the importing country can demand health certificate of the exporting country for imports when the pathogenicity or host range of the strain in the exporting country is significantly higher or larger than that in the importing country. In order to prevent introduction to or spreading in a country of new genotypes of VHSV and to facilitate the responsibilities of exporting and importing countries, such as issuing health certificates and carry out quarantine and disease control programs, a quick and simple detection method for discriminating between each the genotypes of VHSV is strongly desired. Monoclonal antibodies (MAbs) VHS-10 and VHS-5.18 specifically recognizing VHSV genotypes IVa and Ib respectively, as well as MAb IP5B11 recognizing all known VHSV isolates, were prepared earlier. In the present study, more new genotype specific monoclonal antibodies against VHSV were produced, aiming at establishing a complete immunocassay for typing of VHSV according to genotype. BALb-c mice were immunized with purified preparations of 7 different genotypes of VHSV (I, Ia, Ib, II, III, IVa and IVb). Six MAbs from these hybridoma clones were selected and their MAbs reactivity in IFAT and ELISA tested against a large panel of 79 VHSV isolates. The isolates representing all known geno- and subgenotypes of VHSV. Among the new MAbs, VHS-1.24, reacted with all types except genotype Ie (the Black Sea variant of VHSV), while MAb VHS-9.23 reacted with all genotypes except genotype IV. MAb VHS-3.80 reacted with genotypes Ib, Ic, Id and II, only. MAb VHS-7.57 reacted with genotype II and IVa. Interestingly, MAb VHS-3.75 reacted with all genotype III isolates except the rainbow trout pathogenic isolate from Norway (NO-2007-50-385) (Dale et al. in press), but did react with the New Brunswick VHSV IVb isolate (Oliver 2002, Gagné et al. 2007). Another MAb (VHS-1.88) reacted with genotype IVb only, except with the New Brunswick isolate. The present findings support a phenotypic difference between NO-2007-50-385 and the other virus representatives in genotype III, and genotype IVb may eventually be split up in two subgroups (the Great Lakes isolates and New Brunswick isolate). In conclusion, we can now distinguish between all genotypes and some of subtypes of VHSV by testing isolates in IFAT or ELISA with 9 MAbs (Table 1).

General information

State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Publication date: 2009
Peer-reviewed: No
Event: Abstract from 14th EAFP International Conference on Diseases of Fish and Shellfish, Prague, Czech Republic.
Source: orbit
Source-ID: 246219
Research output: Research - peer-review › Journal article – Annual report year: 2009
FishPathogens.eu/vhsv: a user-friendly viral haemorrhagic septicaemia virus isolate and sequence database

A database has been created, http://www.FishPathogens.eu, with the aim of providing a single repository for collating important information on significant pathogens of aquaculture, relevant to their control and management. This database will be developed, maintained and managed as part of the European Community Reference Laboratory for Fish Diseases function. This concept has been initially developed for viral haemorrhagic septicaemia virus and will be extended in future to include information on other significant aquaculture pathogens. Information included for each isolate comprises sequence, geographical origin, host origin and useful key literature. Various search mechanisms make it easy to find specific groups of isolates. Search results can be presented in several different ways including table-based, map-based and graph-based outputs. When retrieving sequences, the user is given freedom to obtain data from any selected part of the genome of interest. The output of the sequence search can be readily retrieved as a FASTA file ready to be imported into a sequence alignment tool of choice, facilitating further molecular epidemiological study.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Jonstrup, S. P., Gray, T., Kahns, S., Skall, H. F., Snow, M., Olesen, N. J.
Publication date: 2009
Peer-reviewed: Yes

Publication information
Journal: Journal of Fish Diseases
ISSN (Print): 0140-7775
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Impact factor 2.056
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
Web of Science (2013): Impact factor 1.507
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.7
Web of Science (2012): Impact factor 1.591
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.09
Web of Science (2011): Impact factor 2
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
FishPathogens.eu/vhsv: A user-friendly Viral Haemorrhagic Septicaemia Virus (VHSV) isolate and sequence database

A database has been created, www.FishPathogens.eu, with the aim of providing a single repository for collating important information on significant pathogens of aquaculture, relevant to their control and management. This database will be developed, maintained and managed as part of the European Community Reference Laboratory for Fish Diseases function. This concept has been initially developed for VHSV and will be extended in future to include information on other significant aquaculture pathogens. Information included for each isolate comprises sequence, geographic origin, host origin and useful key literature. Various search mechanisms make it easy to find specific groups of isolates. Search results can be presented in several different ways including table based, map based, and graph based outputs. When retrieving sequences, the user is given freedom to obtain data from any selected part of the genome of interest. The output of the sequence search can be readily retrieved as a FASTA file ready to be imported into a sequence alignment tool of choice, facilitating further molecular epidemiological study.

General information

State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Publication date: 2009
Peer-reviewed: No
Event: Poster session presented at 14th EAFP International Conference on Diseases of Fish and Shellfish, Prague, Czech Republic.

Inter-laboratory proficiency tests to detect viral fish diseases.

An inter-laboratory proficiency test has been provided by the European Community Laboratory (CRL) for Fish Diseases every year since 1996. The test is provided to all European National Reference Laboratories (NRLs) that are obliged to participate and to a limited number of non-European NRLs, making the total number of participating laboratories 35. The test is primarily designed to assess the ability of participating laboratories to identify and quantify the notifiable non-exotic fish pathogenic viruses: Viral haemorrhagic septicaemia virus (VHSV) and infectious haematopoietic necrosis virus (IHNV) but also to assess their ability to differentiate other fish viruses as spring viraemia of carp virus, infectious pancreatic necrosis virus, perch rhabdovirus etc. Five coded ampoules are provided to participants containing lyophilised supernatant from infected cell cultures. The CRL collect the data and provide a statistically and graphically picture of the performance of the individual laboratory relative to other participants. The proficiency test has been used for additional purposes.
Participants have been asked to genotype virus isolates and have been encouraged to submit full-length G-gene sequences of the rhabdoviruses identified in order to analyse the inter-laboratory quality of sequencing results. Such results are very important for assessing how sequence data can be used in e.g. molecular tracing. Here we present results and experiences obtained from these additional studies.

**General information**

State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Kahns, S., Nicolajsen, N., Skall, H. F., Olesen, N. J.
Publication date: 2009
Peer-reviewed: No
Event: Poster session presented at 14th EAFP International Conference on Diseases of Fish and Shellfish, Prague, Czech Republic.
Keywords: fish viruses, Proficiency test
Source: orbit
Source-ID: 254042
Research output: Research › Poster – Annual report year: 2009

**Nyt fra Veterinærinstituttet: VHS er en trussel for havbrug - særlig om vinteren**

**General information**

State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Skall, H. F., Olesen, N. J.
Pages: 28
Publication date: 2009
Peer-reviewed: Unknown

**Publication information**

Journal: Dansk Veterinaertidsskrift
Volume: 92
Issue number: 1
ISSN (Print): 0106-6854
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
BFI (2015): BFI-level 1
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 1
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
BFI (2009): BFI-level 1
BFI (2008): BFI-level 1
Original language: Danish
Source: orbit
Source-ID: 235062
Research output: Communication › Journal article – Annual report year: 2009

**O-005: Detection of antibodies against VHSV and IHNV in rainbow trout (Oncorhynchus mykiss)**

**General information**

State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Castric, J.
Number of pages: 489
O-021: A retrospective cluster-analysis of the occurrence of viral haemorrhagic septicaemia in Denmark

General information
State: Published
Organisations: National Veterinary Institute, Section of Fish Diseases, Division of Poultry, Fish and Fur Animals
Contributors: Jensen, A. B. B., Olesen, N. J., Ersbøll, A. K.
Number of pages: 489
Publication date: 2009

Host publication information
Title of host publication: 14th EAFP International Conference of Diseases of Fish and Shellfish
Publisher: HALAMA publishing house
ISBN (Print): 978-8087082-13-3
Keywords: VHSV, Epidemiology
Source: orbit
Source-ID: 254951
Research output: Research › Conference abstract in proceedings – Annual report year: 2009

O-114: Distinction between genotypes of viral haemorrhagic septicaemia virus (VHSV) using monoclonal antibodies

General information
State: Published
Organisations: National Veterinary Institute, Section of Fish Diseases, Division of Poultry, Fish and Fur Animals
Number of pages: 489
Publication date: 2009

Host publication information
Title of host publication: 14th EAFP International Conference of Diseases of Fish and Shellfish
Publisher: HALAMA publishing house
ISBN (Print): 978-8087082-13-3
Keywords: VHSV, distinction, genotype
Source: orbit
Source-ID: 254040
Research output: Research › Conference abstract in proceedings – Annual report year: 2009

Outbreak of viral haemorrhagic septicaemia (VHS) in seawater-farmed rainbow trout in Norway caused by VHS virus genotype III
We describe the finding of a novel viral haemorrhagic septicaemia virus (VHSV) Genotype III strain that caused disease of both a neurological and septicaemic nature in seawater-farmed rainbow trout Oncorhynchus mykiss in Storfjorden, Norway. In November 2007, an outbreak of VHS associated with slightly elevated mortality was confirmed at a seawater site rearing rainbow trout (90 to 440 g). Within 3 to 4 mo, the disease was recognised in 3 neighbouring sea sites with on-growing rainbow trout. The clinical, gross pathological and histopathological findings were in accordance with VHS, and the diagnosis was confirmed by the detection of VHSV in brain and internal tissues by immunohistochemistry, cell culture and reverse transcriptase PCR (RT-PCR). Sequence analysis of the G-gene revealed that the isolated virus clustered with VHSV Genotype III and that the Norwegian isolate represents a unique strain of VHSV. The pathogenicity of the virus strain to rainbow trout and Atlantic salmon Salmo salar was examined using infection experiments. For Atlantic salmon, no mortality was observed in immersion trials, whereas 52% mortality was observed after intraperitoneal injection of the virus. The Norwegian isolate thus represents the first VHSV of Genotype III pathogenic to rainbow trout.

General information
Scopus rating (2006): SJR 0.875 SNIP 0.966
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.909 SNIP 1.033
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.992 SNIP 1.097
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.942 SNIP 1.188
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.199 SNIP 1.217
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.35 SNIP 1.193
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.16 SNIP 1.215
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.193 SNIP 1.139
Original language: English
Keywords: VHSV, sea farm, VHS, rainbow trout, genotype III
DOIs:
10.3354/dao02065
URLs:
Source: orbit
Source-ID: 244877
Research output: Research - peer-review › Journal article – Annual report year: 2009

P-001: Koi herpes virus world wide: results of the global KHV questionnaire 2007-2009

**General information**
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Haenen, O., Olesen, N. J.
Number of pages: 489
Publication date: 2009
Peer-reviewed: No
Event: Poster session presented at 14th EAFP International Conference on Diseases of Fish and Shellfish, Prague, Czech Republic.
Keywords: KHV
Electronic versions:
Haenen EPIZONE EAFP 2009 poster Haenen (6627).pdf
Source: orbit
Source-ID: 254955
Research output: Research › Poster – Annual report year: 2009

PATHOLOGY AND EPIDEMIOLOGY OF VIRAL HAEMORRHAGIC SEPTICAEMIA OUTBREAKS IN POLAND

**General information**
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Reichert, M., Matras, M., Kahns, S., Antychowicz, J., Olesen, N. J.
Pages: 304-304
Publication date: 2009
Peer-reviewed: Yes

**Publication information**
Journal: Journal of Comparative Pathology
Volume: 141
Issue number: 4
ISSN (Print): 0021-9975
Ratings:
BFI (2018): BFI-level 1
Photobacterium damselae subsp damselae, an emerging pathogen in Danish rainbow trout, Oncorhynchus mykiss (Walbaum), mariculture

A selection of 16 field isolates of Photobacterium damselae from marine rainbow trout farms in Denmark was subjected to phenotypic and genotypic characterization and pathogenicity to fish. All isolates belonged to the subspecies damselae, being positive for haemolysis, motility and urease. There were considerable differences in haemolytic properties, some isolates presenting a broad zone of haemolysis and others only a narrow zone. Pulsed-field gel electrophoresis revealed a high diversity indicating that P. damselae subsp. damselae is an opportunistic, not clonal pathogen in Danish marine rainbow trout. Virulence of the strains to rainbow trout was highly variable with LD50 values ranging from $3.9 \times 10^3$ to $1.5 \times 10^8$ cfu at 20 degrees C. The virulence was significantly higher at 20 degrees C than at 13 degrees C. The strains with the strongest haemolytic properties were the most virulent suggesting a strong involvement of haemolysin in the pathogenesis. The pathological changes were consistent with a bacterial septicaemia and the haemorrhages were more pronounced than for most other bacterial infections.

General information
State: Published
Organisations: National Veterinary Institute, Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, Section of Poultry Diseases
Contributors: Pedersen, K., Skall, H. F., Lassen-Nielsen, A. M., Friis-Holm, L. B., Olesen, N. J.
Pages: 465-472
Publication date: 2009
Peer-reviewed: Yes

Publication information
Journal: Journal of Fish Diseases
Volume: 32
Issue number: 5
ISSN (Print): 0140-7775
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Impact factor 2.056
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
Web of Science (2013): Impact factor 1.507
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.7
Web of Science (2012): Impact factor 1.591
ISI indexed (2012): ISI indexed yes
Phylogenetic characterisation of European fresh water viral haemorrhagic septicaemia virus (VHSV) isolates

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Publication date: 2009
Peer-reviewed: No
Event: Poster session presented at 15th International Bioinformatics Workshop on Virus Evolution and Molecular Epidemiology, Rotterdam, Holland, .
Source: orbit
Source-ID: 254948
Research output: Research › Poster – Annual report year: 2009

Poster: Detection of antibodies against VHSV and IHNV in rainbow trout

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Castric, J.
Publication date: 2009
Peer-reviewed: No
Event: Poster session presented at 3rd Annual Meeting of EPIZONE, Antalya, Turkey.
Keywords: seroneutralisation, surveillance, aquaculture, IHN, VHS
Source: orbit
Source-ID: 254957
Research output: Research › Poster – Annual report year: 2009

Proficiency testing of national reference laboratories for fish diseases

General information
Susceptibility testing of fish cell lines for virus isolation

Passage of cell cultures may adversely influence cell susceptibility to virus infection through selection of cell clones that thrive in vitro but may not necessarily display high sensitivity to virus infection. Susceptibility to a given virus can therefore vary not only between cell lines and laboratories, but also between lineages of the same cell line. To minimise the occurrence of false negatives in a cell culture based surveillance system, we have investigated methods, to select cell lineages that are relatively superior in their susceptibility to a panel of virus isolates. The procedures compare susceptibility between cell lines and between lineages within a laboratory and between laboratories (Inter-laboratory Proficiency Test). The objective being that the most sensitive cell line and lineages are routinely selected for diagnostic purposes. In comparing cell lines, we simulated "non-cell-culture-adapted" virus by propagating the virus in heterologous cell lines to the one tested. A stock of test virus was produced and stored at -80 °C and tests were conducted biannually. This procedure becomes complicated when several cell lines are in use and does not account for variation among lineages. In comparing cell lineages, we increased the number of isolates of each virus, propagated stocks in a given cell line and tested all lineages of that line in use in the laboratory. Testing of relative cell line susceptibility between laboratories is carried out annually via the Inter-laboratory Proficiency Test (Ariel et al., in press), which is organised by the European Community Reference Laboratory for Fish Diseases (CRL) in Denmark. In the year 2000, infected organ material rather than cell-culture-adapted virus was included in the test, to approach a realistic assessment of the variability in cell sensitivity for surveillance purposes within a cell line and between laboratories. In terms of economic and practical considerations as well as attempting to approach a realistic test system, we suggest the optimal procedure for susceptibility testing of fish cell lines for virus isolation to be a combination of biannual tests within the laboratory to compare cell lineages combined with the Inter-laboratory Proficiency Test.

General information
State: Published
Organisations: National Veterinary Institute, Section of Fish Diseases, Division of Poultry, Fish and Fur Animals
Contributors: Ariel, E., Skall, H. F., Olesen, N. J.
Pages: 125-130
Publication date: 2009
Peer-reviewed: Yes

Publication information
Journal: Aquaculture
Volume: 298
Issue number: 1-2
ISSN (Print): 0044-8486
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 3.05 SJR 1.152 SNIP 1.58
Web of Science (2017): Impact factor 2.71
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.75 SJR 1.122 SNIP 1.51
Web of Science (2016): Impact factor 2.57
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 2.12 SJR 1.107 SNIP 1.256
Web of Science (2015): Impact factor 1.893
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 2.16 SJR 1.01 SNIP 1.33
Web of Science (2014): Impact factor 1.878
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.18 SJR 1.151 SNIP 1.293
Web of Science (2013): Impact factor 1.828
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.32 SJR 1.222 SNIP 1.485
Web of Science (2012): Impact factor 2.009
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.39 SJR 1.281 SNIP 1.536
Web of Science (2011): Impact factor 2.041
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.161 SNIP 1.39
Web of Science (2010): Impact factor 2.044
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.949 SNIP 1.27
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.917 SNIP 1.165
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.033 SNIP 1.315
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.021 SNIP 1.695
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.937 SNIP 1.238
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.072 SNIP 1.626
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.151 SNIP 1.909
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.969 SNIP 1.458
Dyrlægens hjørne: VHS er en trussel for havbrug - særligt om vinteren

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Skall, H. F., Olesen, N. J.
Pages: 6
Publication date: 2008
Peer-reviewed: Unknown

Publication information
Journal: Dansk Akvakultur. Nyhedsbrev
Issue number: December
ISSN (Print): 1902-276X
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
URLs:
http://www.danskakvakultur.dk/files/Nyhedsbrev/Medlemsinfo/Nyhedsbrev_december_2008_mail.pdf
Source: orbit
Source-ID: 254000
Research output: Communication › Journal article – Annual report year: 2009

Egtvedsyge og frontforskning i fiskevacciner. Århusafdelingens indsats har været meget vigtig for forskningen i og bekæmpelsen af Egtvedsyge, en alvorlig sygdom hos dambrugsfisk i Europa og USA

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Lorenzen, N.
Pages: 10-13
Publication date: 2008
Peer-reviewed: No

Publication information
Journal: DTU Vet 100 års jubilæumsskrift
Original language: Danish
Source: orbit
Source-ID: 241565
Research output: Research › Journal article – Annual report year: 2008
National biosecurity approaches, plans and programmes in response to diseases in farmed aquatic animals: evolution, effectiveness and the way forward

The rapid increase in aquaculture production and trade, and increased attention to the negative effects of disease, are becoming stimuli for developing national biosecurity strategies for farmed fisheries, for which the World Organisation for Animal Health (OIE) Aquatic Animal Health Code and Manual of Diagnostic Tests for Aquatic Animals serve as an excellent framework. Using examples from a few countries and selected diseases, this paper provides a general overview of the development of approaches to implementing biosecurity strategies, including those emerging in the national legislation and regulations of some countries, and those being initiated by industries themselves. The determination of disease status in different epidemiological units (from a farm to a nation), appropriate approaches for preventing the introduction of disease and developing contingencies for disease control and eradication are also discussed. Important to the effectiveness of such strategies are provision of financial, personnel and other resources to implement them, including incentives such as indemnification or compensation in eradication programmes, and practical linkage to regulatory or government policy initiatives.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, National Veterinary Institute, Biosecurity New Zealand, Norwegian Food Safety Authority, Marine Scotland, American Veterinary Medical Association, Australian Goverment Department of Agriculture and Water Resources
Contributors: Håstein, T., Binde, M., Hine, M., Johnsen, S., Lillehaug, A., Olesen, N. J., Purvis, N., Scarfe, A., Wright, B.
Pages: 125-145
Publication date: 2008
Peer-reviewed: Yes

Publication information
Journal: Rev Sci Tech Off Int Epizoot
Volume: 27
Issue number: 1
ISSN (Print): 0253-1933
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.34 SJR 0.609 SNIP 0.785
Web of Science (2017): Impact factor 1.143
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.24 SJR 0.595 SNIP 0.827
Web of Science (2016): Impact factor 0.929
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.11 SJR 0.567 SNIP 0.751
Web of Science (2015): Impact factor 0.904
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.12 SJR 0.558 SNIP 0.733
Web of Science (2014): Impact factor 0.91
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.99 SJR 0.454 SNIP 0.582
Web of Science (2013): Impact factor 0.967
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.03 SJR 0.538 SNIP 0.586
Web of Science (2012): Impact factor 0.69
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.39 SJR 0.619 SNIP 0.611
Nye anmeldepligtige fiskeesygdomme

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J.
Publication date: 2008
Peer-reviewed: No

Publication information
Journal: Dansk Veterinær Tidsskrift
ISSN (Print): 0106-6854
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
BFI (2015): BFI-level 1
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 1
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
BFI (2009): BFI-level 1
Surveillance of health status on eight marine rainbow trout, Oncorhynchus mykiss (Walbaum), farms in Denmark in 2006

General information
State: Published
Organisations: National Veterinary Institute, Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, Section of Poultry Diseases, Aquasearch Ova Aps, Danish Aquaculture Organisation
Contributors: Pedersen, K., Skall, H. F., Lassen-Nielsen, A. M., Nielsen, T., Henriksen, N., Olesen, N. J.
Pages: 659-667
Publication date: 2008
Peer-reviewed: Yes

Publication Information
Journal: Journal of Fish Diseases
Volume: 31
Issue number: 9
ISSN (Print): 0140-7775
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Impact factor 2.056
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
Web of Science (2013): Impact factor 1.507
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.7
Web of Science (2012): Impact factor 1.591
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.09
Web of Science (2011): Impact factor 2
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Classification of viral haemorrhagic septicaemia virus (VHSV) and how do we define the disease VHS?

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Madsen, S., Einer-Jensen, K., Skall, H. F., Lorenzen, N.
Publication date: 2007
Peer-reviewed: No
Event: Abstract from 7th International Symposium on Viruses of Lower Vertebrates, Oslo, Norway.
Source: orbit
Source-ID: 242035
Research output: Research › Conference abstract for conference – Annual report year: 2007

Detection of rainbow trout antibodies against viral haemorrhagic septicaemia virus (VHSV) by neutralisation test is highly dependent on the virus isolate used

Three serological tests, enzyme linked immunosorbent assay (ELISA), 50 % plaque neutralisation test (50%PNT) and Western blotting (WB), were used to detect antibodies against viral haemorrhagic septicaemia virus (VHSV) in 50 rainbow trout broodstock from a rainbow trout farm endemically infected with VHS but with no clinical signs of infection. When the sera were examined by 50%PNT using the VHSV reference isolate DK-F1 or the heat attenuated DK-F25 mutant strain, no neutralizing antibodies were found. In contrast, when one of the virus isolates from the farm (homologous virus) was used in the 50 %PNT, 90 % of the fish were found to be positive. By examining a panel of different VHSV isolates in 50 %PNT, it was demonstrated that the virus isolate used as test antigen could significantly affect the sensitivity and titre determination in 50 %PNT for detection of rainbow trout antibodies against VHSV. When the sera were examined for the presence of VHSV antibodies by ELISA or WB, 61 % were found to be positive. When conducting WB analysis, the viral glycoprotein was the protein most frequently recognized, followed by the viral nucleoprotein.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Fregeneda-Grandes, J., Olesen, N. J.
Pages: 151-158
Publication date: 2007
Peer-reviewed: Yes

Publication information
Journal: Diseases of Aquatic Organisms
Volume: 74
Issue number: 2
ISSN (Print): 0177-5103
Ratings:
BFI (2018): BFI-level 1
Molecular and phylogentic studies of perch rhabdoviruses (P-11)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Johansson, T., Skall, H. F., Olesen, N. J.
Publication date: 2007
Peer-reviewed: No
Event: Poster session presented at 13th International Conference on Diseases of Fish and Shellfish, Grado, Italy.
Source: orbit
Source-ID: 242047
Research output: Research › Poster – Annual report year: 2007

Molecular studies of perch rhabdoviruses

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Johansson, T., Skall, H. F., Olesen, N. J.
Publication date: 2007
Peer-reviewed: No
Event: Abstract from 13th International Conference on Diseases of Fish and Shellfish, Grado, Italy.
Source: orbit
Source-ID: 242041
Research output: Research › Conference abstract for conference – Annual report year: 2007

Survey and diagnosis summary: 1) status and emergence of VHS and IHN in Europe. 2) other fish disease monitoring programmes in EU

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Jensen, B., Skall, H. F., Nicolajsen, N.
Publication date: 2007
Peer-reviewed: No
Event: Abstract from Annual Meeting for DTU-National Veterinary Institute in Copenhagen, Copenhagen, .
Source: orbit
Source-ID: 242039
Research output: Research › Conference abstract for conference – Annual report year: 2007

Viral haemorrhagic septicaemia virus (VHSV)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Skall, H. F., Olesen, N. J.
Number of pages: 459
Pages: 17-28
Publication date: 2007
An epidemiological study of the occurrence of Viral Haemorrhagic Septicaemia in Denmark during 1982-2005

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Jensen, B., Ersbøll, A., Korsholm, H., Olesen, N. J.
Number of pages: 3
Publication date: 2006

Host publication information
Title of host publication: proceedings of The International Symposium on Veterinary Epidemiology and Economics
Source: orbit
Source-ID: 241535
Research output: Research › Article in proceedings – Annual report year: 2006

Viral haemorrhagic septicaemia (VHS) outbreaks in Finnish-rainbow trout farms
In Finland, viral haemorrhagic septicaemia virus (VHSV) was diagnosed for the first time in 2000 from 4 rainbow trout farms in brackish water. Since then the infection has spread and, by the end of 2004, VHSV had been isolated from 24 farms in 3 separate locations: 2 in the Baltic Sea and 1 in the Gulf of Finland. The pathogenicity of 3 of these isolates from 2 separate locations was analysed in infection experiments with rainbow trout fry. The cumulative mortalities induced by waterborne and intraperitoneal challenge were approximately 40 and 90%, respectively. Pair-wise comparisons of the G and NV gene regions of Finnish VHSV isolates collected between 2000 and 2004 revealed that all isolates were closely related, with 99.3 to 100% nucleotide identity, which suggests the same origin of infection. Phylogenetic analysis revealed that they were closely related to the old freshwater isolates from rainbow trout in Denmark and to one old marine isolate from cod in the Baltic Sea, and that they were located close to the presumed ancestral source. As the Finnish isolates induce lower mortality than freshwater VHSV isolates in infection experiments, they could represent an intermediate stage of marine isolates evolving towards pathogenicity in rainbow trout.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Pages: 201-211
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: Diseases of Aquatic Organisms
Volume: 72
Issue number: 3
ISSN (Print): 0177-5103
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.7 SJR 0.675 SNIP 0.95
Web of Science (2017): Impact factor 1.543
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.95 SJR 0.893 SNIP 0.92
Web of Science (2016): Impact factor 1.549
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.96 SJR 0.973 SNIP 0.943
Web of Science (2015): Impact factor 1.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.86 SJR 0.895 SNIP 0.889
Web of Science (2014): Impact factor 1.752
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.77 SJR 0.831 SNIP 0.928
Web of Science (2013): Impact factor 1.586
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.04 SJR 0.919 SNIP 1.092
Web of Science (2012): Impact factor 1.734
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.29 SJR 1.12 SNIP 1.164
Web of Science (2011): Impact factor 2.201
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.918 SNIP 0.948
Web of Science (2010): Impact factor 1.572
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.897 SNIP 0.985
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.865 SNIP 0.995
Scopus rating (2007): SJR 0.951 SNIP 1.05
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.875 SNIP 0.966
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.909 SNIP 1.033
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.992 SNIP 1.097
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.942 SNIP 1.188
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.199 SNIP 1.217
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.35 SNIP 1.193
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.16 SNIP 1.215
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.193 SNIP 1.139

Original language: English
Keywords: viral haemorrhagic septicaemia virus, VHSV, epidemiology, rainbow trout
DOIs:
Prevalence of viral haemorrhagic septicemia virus in Danish marine fishes and its occurrence in new host species

In order to analyse the occurrence of viral haemorrhagic septicemia virus (VHSV) in the marine waters around Denmark, staff from the Danish Institute for Food and Veterinary Research participated in 5 research cruises during 1998 to 2002 as a follow-up to 4 research cruises performed in 1996 to 1997. In total, 16 655 fish were examined virologically as 3569 samples. Forty fish species and 3 invertebrate species were represented. VHSV was isolated from 133 samples representing 8 species: herring Clupea harengus, sprat Sprattus sprattus, dab Limanda limanda, flounder Platichthys flesus, plaice Pleuronectes platessa, cod Gadus morhua, sand eel Ammodytes sp. and sand goby Pomatochistus minutus. Calculations showed that VHSV was more prevalent in the Baltic Sea in an area between Zealand and the island of Bornholm and the waters surrounding Bornholm than in the Kattegat, Skagerrak and along the North Sea coast of Denmark. This is the first report on the isolation of VHSV from dab, flounder and plaice and the first publication on VHSV from sand eel from Europe and sand goby.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Madsen, S., Einer-Jensen, K., Østergård, P., Devold, M., Olesen, N. J.
Publication date: 2005
Peer-reviewed: No
Event: Abstract from 12th International Conference on Diseases of Fish and Shellfish, Copenhagen, Denmark.
Source: orbit
Source-ID: 241723
Research output: Research › Conference abstract for conference – Annual report year: 2005
Selective breeding provides an approach to increase resistance of rainbow trout (Oncorhynchus mykiss) to the diseases, enteric redmouth disease, rainbow trout fry syndrome, and viral haemorrhagic septicemia.

In this study, we reasoned that if we challenged rainbow trout with the causative agents of enteric redmouth disease (ERM), rainbow trout fry syndrome (RTFS), and viral haemorrhagic septicemia (VHS), we would: 1) detect additive genetic variation for resistance to ERM, RTFS, and VHS; and 2) find that resistance of the trout to ERM and RTFS are favourably correlated genetically, while resistance to VHS is unfavourably correlated with resistance to ERM and RTFS. We tested these premises by challenging 63 full-sib families of rainbow trout (50 sires, 38 dams) with Yersinia ruckeri, Flavobacterium psychrophilum, and VHS virus, the causative agents of ERM, RTFS, and VHS. Resistance to each disease was assessed as both a binary trait (i.e., died/survived) and a longitudinal trait (i.e., time until death following challenge). Additive genetic variation and genetic correlations for resistance to ERM, RTFS, and VHS were estimated by fitting a threshold liability model to resistance assessed as a binary trait. As a longitudinal trait, additive genetic variation and genetic correlations were estimated by fitting a Weibull frailty model to the times until death. Our findings support the first of our premises as we detected additive genetic variation for resistance to ERM, RTFS, and VHS. The heritability for resistance to ERM, RTFS, and VHS ranged between 0.42 and 0.57 on the underlying liability scale when resistance was assessed as a binary trait. As a longitudinal trait, the heritabilities ranged between 0.07 and 0.21 for time until death on the logarithmic-time scale. We were, however, unable to support our second premise as we found that resistance to each of the diseases tended to be weakly correlated genetically. The genetic correlations between the resistances ranged between -0.11 and 0.15 when resistance was assessed as a binary trait, and between -0.23 and 0.16 when resistance was assessed as a longitudinal trait. These findings are encouraging for commercial trout production. The additive genetic variation detected for resistance demonstrates that selectively breeding trout for resistance to ERM, RTFS, and VHS will be successful, providing a complementary approach to control these diseases. The weak genetic correlations suggest that it should be relatively easy to improve resistance to each of the diseases simultaneously.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Section for Aquaculture, National Institute of Aquatic Resources
Contributors: Henryon, M., Berg, P., Olesen, N. J., Kjær, T. E., Slierendrecht, W., Jokumsen, A., Lund, I.
Pages: 621-636
Publication date: 2005
Peer-reviewed: Yes

Publication information
Journal: Aquaculture
Volume: 250
Issue number: 3-4
ISSN (Print): 0044-8486
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 3.05 SJR 1.152 SNIP 1.58
Web of Science (2017): Impact factor 2.71
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.75 SJR 1.122 SNIP 1.51
Web of Science (2016): Impact factor 2.57
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 2.12 SJR 1.107 SNIP 1.256
Web of Science (2015): Impact factor 1.893
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 2.16 SJR 1.01 SNIP 1.33
Web of Science (2014): Impact factor 1.878
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.18 SJR 1.151 SNIP 1.293
Web of Science (2013): Impact factor 1.828
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.32 SJR 1.222 SNIP 1.485
Web of Science (2012): Impact factor 2.009
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.39 SJR 1.281 SNIP 1.536
Web of Science (2011): Impact factor 2.041
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.161 SNIP 1.39
Web of Science (2010): Impact factor 2.044
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.949 SNIP 1.27
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.917 SNIP 1.165
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.033 SNIP 1.315
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.021 SNIP 1.695
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.937 SNIP 1.238
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.072 SNIP 1.626
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.151 SNIP 1.909
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.969 SNIP 1.458
Viral haemorrhagic septicaemia virus in marine fish and its implications for fish farming - a review

Viral haemorrhagic septicaemia virus (VHSV) has, in recent decades, been isolated from an increasing number of free-living marine fish species. So far, it has been isolated from at least 48 fish species from the northern hemisphere, including North America, Asia and Europe, and fifteen different species including herring, sprat, cod, Norway pout and flatfish from northern European waters. The high number of VHSV isolations from the Baltic Sea, Kattegat, Skagerrak, the North Sea and waters around Scotland indicate that the virus is endemic in these waters. The VHSV isolates originating from wild marine fish show no to low pathogenicity to rainbow trout and Atlantic salmon, although several are pathogenic for turbot. Marine VHSV isolates are so far serologically indistinguishable from freshwater isolates. Genotyping based on VHSV G- and N-genes reveals four groups indicating the geographical origin of the isolates, with one group representing traditional European freshwater isolates and isolates of north European marine origin, a second group of marine isolates from the Baltic Sea, a third group of isolates from the North Sea, and a group representing North American isolates. Examples of possible transfer of virus from free-living marine fish to farmed fish are discussed, as are measures to prevent introduction of VHSH from the marine environment to aquaculture.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Skall, H. F., Olesen, N. J., Møllergaard, S.
Pages: 509-529
Publication date: 2005
Peer-reviewed: Yes

Publication information
Journal: Journal of Fish Diseases
Volume: 28
Issue number: 9
ISSN (Print): 0140-7775
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Impact factor 2.056
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
Web of Science (2013): Impact factor 1.507
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.7
Web of Science (2012): Impact factor 1.591
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.09
Web of Science (2011): Impact factor 2
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Impact factor 1.603
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Web of Science (2008): Indexed yes
Web of Science (2007): Indexed yes
Web of Science (2006): Indexed yes
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
Web of Science (2003): Indexed yes
Web of Science (2001): Indexed yes
Web of Science (2000): Indexed yes
Original language: English
Keywords: viral haemorrhagic septicaemia virus (VHSV), aquaculture, wild marine fish, legislation, marine VHSV isolates, review
DOIs:
10.1111/j.1365-2761.2005.00654.x
Source: orbit
Source-ID: 230211
Research output: Research - peer-review › Journal article – Annual report year: 2005

Work package 1 report: Hazard identification for vertical transfer of fish disease agents

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Bovo, G., Håstein, T., Hill, B., LaPatra, S., Michel, C., Olesen, N. J., Shchelkunov, I., Storset, A., Wolffrom, T., Midtlyng, P. J.
Number of pages: 35
Publication date: 2005

Publication information
Place of publication: Oslo, Norway
Publisher: VESO
ISBN (Print): 82-91-74334-7
Original language: English
(VESO: No. VESO-1601).
Source: orbit
Source-ID: 241531
Research output: Research › Report – Annual report year: 2005
Work package 3 report: Pathogen survival outside the host, and susceptibility to disinfection

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Bovo, G., Hill, B., Husby, A., Håstein, T., Michel, C., Olesen, N. J., Storset, A., Midtlyng, P. J.
Number of pages: 41
Publication date: 2005

Publication information
Place of publication: Oslo, Norway
Publisher: VESO
ISBN (Print): 82-91-74336-3
Original language: English
Source: orbit
Source-ID: 241533
Research output: Research › Report – Annual report year: 2005

Work package 4 report: Broodfish testing for viral infections

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Bovo, G., Dannevig, B., Hill, B., Håstein, T., Munro, E., Midtlyng, P. J.
Number of pages: 20
Publication date: 2005

Publication information
Place of publication: Oslo, Norway
Publisher: VESO
ISBN (Print): 82-91-74342-8
Original language: English
Source: orbit
Source-ID: 241534
Research output: Research › Report – Annual report year: 2005

Experimental infection of rainbow trout Oncorhynchus mykiss with viral haemorrhagic septicaemia virus isolates from European marine and farmed fishes

The susceptibility of rainbow trout Oncorhynchus mykiss to infection with various isolates of viral haemorrhagic septicaemia virus (VHSV) was examined. A total of 8 experiments with rainbow trout ranging from 0.6 to 6.2 g was conducted for 139 isolates originating from wild marine fishes in European waters (115 isolates), farmed turbot from Scotland and Ireland (2 isolates), and farmed rainbow trout (22 isolates). The isolates were tested by immersion and/or intraperitoneal injection either as pooled or single isolates. The isolates from wild marine fishes did not cause mortality by immersion while some of the isolates caused mortality when injected. All VHSV isolates from farmed rainbow trout caused significant mortality by immersion. Currently, pathogenicity trials are the only way to differentiate VHSV isolates from wild marine fishes and farmed rainbow trout. The 2 farmed turbot isolates did not cause mortality by immersion, supporting the view that they originated from the marine environment.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Skall, H. F., Slierendrecht, W., King, J., Olesen, N. J.
Pages: 99-110
Publication date: 2004
Peer-reviewed: Yes

Publication information
Journal: Diseases of Aquatic Organisms
Volume: 58
Issue number: 2-3
ISSN (Print): 0177-5103
Investigation of wild caught whitefish, Coregonus lavaretus (L.), for infection with viral haemorrhagic septicaemia virus (VHSV) and experimental challenge of whitefish with VHSV

One hundred and forty-eight wild whitefish, Coregonus lavaretus (L.), were caught by electrofishing and sampled for virological examination in December 1999 and 2000, during migration from the brackish water feeding grounds to the freshwater spawning grounds, where the whitefish may come into contact with farmed rainbow trout. All samples were examined on cell cultures. No viruses were isolated. Three viral haemorrhagic septicaemia virus (VHSV) isolates of different origin were tested in infection trials by immersion and intraperitoneal (IP) injection, using 1.5 g farmed whitefish: an isolate from wild caught marine fish, a farmed rainbow trout isolate with a suspected marine origin and a classical freshwater isolate. The isolates were highly pathogenic by IP injection where 99-100% of the whitefish died. Using an immersion challenge the rainbow trout isolates were moderately pathogenic with approximately 20% mortality, whereas the marine isolate was virtually non-pathogenic. At the end of the experiment it was possible to isolate VHSV from survivors infected with the marine and suspected marine isolates. Because of the low infection rate in wild whitefish in Denmark, the role of whitefish in the spread of VHSV in Denmark is probably not significant. The experimental studies, however, showed that whitefish are potential carriers of VHSV as they suffer only low mortality after infection but continue...
to carry virus.

**General information**
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Skall, H. F., Kjær, T. E., Olesen, N. J.
Pages: 401-408
Publication date: 2004
Peer-reviewed: Yes

**Publication information**
Journal: Journal of Fish Diseases
Volume: 27
Issue number: 7
ISSN (Print): 0140-7775
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Impact factor 2.056
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
Web of Science (2013): Impact factor 1.507
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.7
Web of Science (2012): Impact factor 1.591
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.09
Web of Science (2011): Impact factor 2
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Impact factor 1.603
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Web of Science (2008): Indexed yes
Zoo-sanitary controls in trade and transfer of fish eggs and sperm

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Pages: 571-572
Publication date: 2004
Peer-reviewed: No

Publication information
Journal: European Aquaculture Society. Special Publications
Issue number: 34
ISSN (Print): 0774-0689
Ratings:
Web of Science (2018): Indexed yes
Web of Science (2017): Indexed yes
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: English
Source: orbit
Source-ID: 241530
Research output: Research › Journal article – Annual report year: 2004

Age- and weight-dependent susceptibility of rainbow trout Oncorhynchus mykiss to isolates of infectious haematopoietic necrosis virus ( IHNV) of varying virulence

The virulence of 5 European and 1 North American isolate of infectious haematopoietic necrosis virus (IHNV) was compared by infecting female sibling rainbow trout ('Isle of Man' strain) of different weights and ages (2, 20 and 50 g). The fish were exposed to 104 TCID50 IHNV per ml of water by immersion, and the mortality was recorded for 28 d. Two new IHNV isolates from Germany were included in the investigation. One was isolated from European eels kept at 23 degrees C (+/-2 degrees C) and the other was not detectable by immunofluorescence with commercially available monoclonal antibodies recognising the viral G protein. The results showed that IHNV isolates of high or low virulence persisted in rainbow trout of all ages/weights for 28 d, with the exception of fish over 15 g in the eel IHNV (DF [diagnostic fish] 13/98)-infected groups from which the virus could not be reisolated on Day 28. The smallest fish were most susceptible to an infection with any of the IHNV isolates, The lowest cumulative mortality (18%) was observed in fingerlings infected with the North American isolate HAG (obtained from Hagerman Valley), and the highest mortality (100%) in DF 04/99 infected fish. The DF 04/99 and O-13/95 viruses caused mortality in fish independent of their weight or age. The isolates FR-32/87 and I-4008 were virulent in fish up to a weight of 20 g and caused no mortality in larger fish. In the IHNV HAG- and DF 13/98 (eel)-infected rainbow trout, no signs of disease were observed in fish weighing between 15 and 50 g. An age/weight related susceptibility of rainbow trout was demonstrated under the defined conditions for all IHNV isolates tested.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Bergmann, S., Fichtner, D., Skall, H. F., Schlotfeldt, H., Olesen, N. J.
Pages: 205-210
Antibody response in rainbow trout artificially infected with VHS and IHN viruses (P-190)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Fregeneda, J., Skall, H. F., Olesen, N. J.
Publication date: 2003
Peer-reviewed: No
Event: Abstract from 11th International Conference on Diseases of Fish and Shellfish, St. Julians, Malta.
Source: orbit
Source-ID: 241715
Research output: Research › Conference abstract for conference – Annual report year: 2003

Antibody response in rainbow trout artificially infected with VHS and IHN viruses (P-190)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Fregeneda, J., Skall, H. F., Olesen, N. J.
Publication date: 2003
Peer-reviewed: No
Event: Poster session presented at 11th International Conference on Diseases of Fish and Shellfish, St. Julians, Malta.
Source: orbit
Source-ID: 242046
Research output: Research › Poster – Annual report year: 2003

An update on vertical transfer of fish diseases

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Wolffrom, T., Bovo, G., Håstein, T., Hill, B., Landsverk, K., Storset, A., Michel, C., Olesen, N. J., Midtlyng, P.
Pages: 372-373
Publication date: 2003
Peer-reviewed: No

Publication information
Journal: European Aquaculture Society. Special Publications
Issue number: 33
ISSN (Print): 0774-0689
LABORATORY DIAGNOSIS OF INFECTIOUS SALMON ANEMIA (ISA): EXPERIENCE GAINED FROM THE OUTBREAKS ON THE FAROE ISLANDS 2000-2003

The first outbreak of ISA on the Faroe Islands was diagnosed in March 2000. Despite intensive surveillance, control and eradication of ISA, the disease has since spread to most of the Faroe Islands affecting about half of the 23 aquaculture farms. Sampling and laboratory diagnosis of ISA is performed according to the EU Commission Decision draft on sampling and diagnostic procedures for ISA. Inspection, clinical and gross-pathological examination and tissue sampling is performed by the veterinarians on the islands. Laboratory examination is done in collaboration between the Veterinary Department at the Faroe Islands and the Danish Veterinary Institute (DVI). Fish tissue samples were investigated by several different methods, including various RT-PCR procedures on kidney material, immunofluorescence staining (IF) of kidney imprints and cell cultures inoculated with organ homogenates, immunohistochemical staining (IHC) of formalin fixed tissue sections a.o. In a few cases haemadsorption to infected cell cultures was evaluated. Cell cultivation is of prime importance as it produces isolates for further study. The SHK-1 cells have proven difficult to use for isolation of ISAV, as the cells tend to become less efficient with higher passage numbers. The problems with the SHK-1 cells have also caused some difficulties in making IF staining for ISAV in these cells. IF on kidney imprints have a high potential in the rapid and low cost diagnosis of ISA from clinical outbreaks. The on-site preparation of the imprints, however, is a critical step. The RT-PCR method has proven very reliable in ISA diagnosis. A number of primers targeting the ISAV genomic segment 2, 5 and 8 were examined. The primers targeting the segment 8 (Mjaaland et al. 1997) were the most efficient in detecting virus positive samples. RT-PCR on supernatants from infected cell cultures has shown that although the SHK-1 cells do not give a clear cytopathic effect they are at least in some cases able to replicate the virus. In addition to the methods recommended by the Commission Decision an IHC method developed by one of the authors has been used. This seems to be a very promising technique, because there is almost a total correspondence between samples positive by RT-PCR and samples positive by this method. In conclusion proper clinical examination on site is still the most efficient method for tentative and primary diagnosis of ISA in Atlantic salmon. IF on imprints and IHC are reliable ways of verifying clinical ISA diagnosis. RT-PCR could be used as a way of screening fish stocks without clinical symptoms of ISA. Cell cultivation must be used in order to facilitate further studies of the viral agent. Methods for reliable surveillance of freedom of ISA should be established in order to prevent further spread of the disease. In order to harmonise diagnostic procedures for ISA recurrent international inter-laboratory proficiency tests will be organised. References: Mjaaland, S., Rimstad, E., Falk, K. & Dannevig B.H. (1997). Genomic characterisation of the virus causing infectious salmon anemia in Atlantic salmon (Salmo salar L): an orthomyxo-like virus in a teleost.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Veterinary Department, Ministry of Trade and Industry, Central Veterinary Laboratory
Contributors: Schyth, B. D., Olesen, N. J., Østergaard, P., Falk, K.
Publication date: 2003
Peer-reviewed: Yes
Event: Abstract from 11th meeting of European Association of Fish Pathologists, Malta, .
Source: orbit
Source-ID: 250973
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2003

Proficiency testing of national reference laboratories in Europe – contributions to quality assurance? (O-78)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Ariel, E., Skall, H. F., Andersen, J., Olesen, N. J.
Publication date: 2003
Peer-reviewed: No
Event: Abstract from 11th International Conference on Diseases of Fish and Shellfish, St. Julians, Malta.
Source: orbit
Source-ID: 241647
A novel fish rhabdovirus from Sweden is closely related to the Finnish rhabdovirus 903/87

A novel rhabdovirus, preliminary designated as the Sea trout rhabdovirus 28/97 (STRV 28/97), was isolated from sea trout (Salmo trutta trutta) in Sweden in 1996. The fish showed central nervous symptoms, and at the autopsy petechial bleedings in the mesenteric fat were visible. STRV 28/97 was shown to be serologically related to the vesiculotype rhabdovirus 903/87 isolated from brown trout (Salmo trutta lacustris) in Finland [1,3]. The sequences for the nucleocapsid protein, phosphoprotein, matrix protein, glycoprotein and beginning of the polymerase protein of STRV 28/97 were determined. At the amino acid level the genes were over 97% similar to virus 903/87. The nucleocapsid proteins, glycoproteins and beginning of the polymerase protein of STRV 28/97 and virus 903/87 were clustered with the vesiculoviruses and the phosphoproteins close to the vesiculoviruses in protein parsimony analysis. The matrix proteins formed a distinct clade in protein parsimony analysis.
comparative susceptibility testing of fish cell lines for virus isolation

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Ariel, E., Olesen, N. J.
Publication date: 2002
Peer-reviewed: No
Event: Abstract from Symposium on Viruses of Lower Vertebrates, Seattle, United States.
Source: orbit
Source-ID: 241710
Research output: Research - peer-review › Journal article – Annual report year: 2002

Investigation into the susceptibility of saithe Pollachius virens to infectious salmon anaemia virus (ISAV) and their potential role as a vector for viral transmission

Wild-caught saithe Pollachius virens were experimentally exposed to an isolate of infectious salmon anaemia virus (ISAV) of Norwegian origin. Mortality attributable to ISAV did not occur following exposure by intra-peritoneal (i.p.) injection of virus or by cohabitation with ISAV-infected Atlantic salmon Salmo salar. Despite the individual testing of 120 ISAV-exposed saithe, ISAV was not detectable using RT-PCR, the most sensitive ISAV diagnostic tool demonstrated to date. Furthermore, saithe exposed to ISAV-infected salmon were not capable of transmitting virus when transferred to tanks containing naive salmon. Thus saithe appear to be resistant to this Norwegian isolate of ISAV and incapable of supporting its replication. Saithe which co-exist with salmon in and around aqua-culture facilities are considered unlikely to have a significant impact on the epizootiology of ISAV.
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.875 SNIP 0.966
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.909 SNIP 1.033
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.992 SNIP 1.097
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.942 SNIP 1.188
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.199 SNIP 1.217
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.35 SNIP 1.193
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.16 SNIP 1.215
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.193 SNIP 1.139
Original language: English
Keywords: saithe, orthomyxovirus, Pollachius virens, infectious salmon anaemia virus, ISAV
DOIs:
10.3354/dao050013
Source: orbit
Source-ID: 229930
Research output: Research - peer-review › Journal article – Annual report year: 2002

Udsætningsål og åleherpesvirus

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J.
Pages: 220
Publication date: 2002
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 100
Issue number: 10
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 241562
Research output: Research › Journal article – Annual report year: 2002

Vergleich von Methoden zum Nachweis einer Infektion mit verschiedenen Isolaten des Virus der Infektiösen Hämatopoetischen Nekrose (IHNV)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Bergmann, S., Ariel, E., Skall, H. F., Fichtner, D., Schlotfeldt, H., Olesen, N. J.
Pages: 385-389
Publication date: 2002
Peer-reviewed: Yes

Publication information
Assessment of a commercial kit collection for diagnosis of the fish viruses: IHNV, IPNV, SVCV and VHSV.

A commercial kit collection for the detection of the fish pathogenic viruses, VHSV, IHNV, IPNV, and SVCV, was assessed for its ability to detect isolates in selected panels of the respective viruses. The kit collection, which was based on fluorescence staining of infected cell cultures in tissue culture plates, fulfilled the promised requirements for the IHN kit only. The IPN, the SVC and especially the VHS kit were lacking in either specificity or sensitivity. The findings stress the need for commercial companies to carry out proper validation before market release.
Characterisation of European perch rhabdoviruses

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Skall, H. F., Kjær, T. E., Johansson, T., Björklund, H.
Publication date: 2001
Peer-reviewed: No
Event: Abstract from 10th International Conference on Diseases of Fish and Shellfish, Dublin, Ireland.
Source: orbit
Source-ID: 241702
Research output: Research › Conference abstract for conference – Annual report year: 2001

Characterisation of European perch rhabdoviruses (P-267)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Skall, H. F., Kjær, T. E., Johansson, T., Björklund, H.
Publication date: 2001
Peer-reviewed: No
Event: Poster session presented at 10th International Conference on Diseases of Fish and Shellfish, Dublin, Ireland.
Source: orbit
Source-ID: 242043
Research output: Research › Poster – Annual report year: 2001
Egtvedsyge i tre dambrug

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Nylin, B., Olesen, N. J.
Pages: 126-132
Publication date: 2001
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 99
Issue number: 6
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 241561
Research output: Research › Journal article – Annual report year: 2001

Finfish in aquaculture and their diseases A retrospective view on the European Community.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Ariel, E., Olesen, N. J.
Publication date: 2001
Peer-reviewed: No
Event: Abstract from 10th International Conference on Diseases of Fish and Shellfish, Dublin, Ireland.
Source: orbit
Source-ID: 241695
Research output: Research › Conference abstract for conference – Annual report year: 2001

Infectious haematopoietic necrosis (IHN): the first confirmed finding in Russia

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Shchelkunov, I., Kupinskaya, O., Didenko, L., Bykovsky, A., Olesen, N. J.
Publication date: 2001
Peer-reviewed: No
Event: Abstract from 10th International Conference on Diseases of Fish and Shellfish, Dublin, Ireland.
Source: orbit
Source-ID: 241704
Research output: Research › Conference abstract for conference – Annual report year: 2001

Molecular characterisation of a rhabdovirus isolated from sea trout in Sweden shows that the virus is related to rhabdovirus 903/87 isolated from brown trout in Finland

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Johansson, T., Östman, L., Hellström, A., Martelius, S., Olesen, N. J., Björklund, H.
Publication date: 2001
Peer-reviewed: No
Event: Abstract from 10th International Conference on Diseases of Fish and Shellfish, Dublin, Ireland.
Source: orbit
Molecular characterisation of the nucleocapsid protein gene, glycoprotein gene and gene junctions of rhabdovirus 903/87, a novel fish pathogenic rhabdovirus

The sequences of the nucleocapsid and glycoprotein genes and the gene junctions of the fish pathogenic rhabdovirus 903/87 were determined from cDNA and PCR clones. The mRNA of the nucleocapsid is most likely 1492 nucleotides long and encodes a protein of 426 amino acids, whereas the mRNA of the glycoprotein is likely to be 1682 nucleotides long and the protein 517 amino acids. When the nucleocapsid and glycoprotein genes of virus 903/87 were compared at amino acid level with other rhabdoviruses they showed the highest homology with the Vesiculovirus genus. By sequencing the junctions between the N, P, M, G and L genes it was determined that transcription start and stop codons were conserved between virus 903/87 and the vesiculo viruses. Virus 903/87 has no open reading frame coding for a non-virion gene between the glycoprotein and the polymerase gene. Phylogenetic studies based on rhabdovirus nucleocapsid and glycoprotein genes suggested that virus 903/87 is related to viruses in the Vesiculovirus genus.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Johansson, T., Nylund, S., Olesen, N. J., Bjørklund, H.
Pages: 11-22
Publication date: 2001
Peer-reviewed: Yes

Publication information
Journal: Virus Research
Volume: 80
Issue number: 1-2
ISSN (Print): 0168-1702
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.58 SJR 1.147 SNIP 0.901
Web of Science (2017): Impact factor 2.484
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.55 SJR 1.208 SNIP 0.917
Web of Science (2016): Impact factor 2.628
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.56 SJR 1.253 SNIP 0.9
Web of Science (2015): Impact factor 2.526
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.63 SJR 1.213 SNIP 0.926
Web of Science (2014): Impact factor 2.324
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.94 SJR 1.3 SNIP 1.105
Web of Science (2013): Impact factor 2.827
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.9 SJR 1.21 SNIP 1.05
Web of Science (2012): Impact factor 2.745
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.04 SJR 1.271 SNIP 1.216
Web of Science (2011): Impact factor 2.941
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.244 SNIP 1.081
Web of Science (2010): Impact factor 2.905
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.313 SNIP 1.042
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.189 SNIP 1.007
Scopus rating (2007): SJR 1.413 SNIP 1.068
Scopus rating (2006): SJR 1.337 SNIP 1.063
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.149 SNIP 0.985
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.909 SNIP 0.845
Scopus rating (2003): SJR 0.774 SNIP 0.816
Scopus rating (2002): SJR 0.718 SNIP 0.738
Scopus rating (2001): SJR 0.811 SNIP 0.816
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.776 SNIP 0.755
Scopus rating (1999): SJR 0.788 SNIP 0.823
Original language: English
Keywords: glycoprotein gene, rhabdoviridae, rhabdovirus 903/87, phylogeny, nucleocapsid gene, gene junctions
DOIs:
10.1016/S0168-1702(01)00323-9
Source: orbit
Source-ID: 230647
Research output: Research - peer-review › Journal article – Annual report year: 2001

One tube RT-PCR for identification of VHSV and IHNV - a rapid, robust and sensitive method for diagnostics (P-229)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Bergmann, S., Einer-Jensen, K., Skall, H. F., Enzmann, P., Fichtner, D., Olesen, N. J.
Publication date: 2001
Peer-reviewed: No
Event: Poster session presented at 10th International Conference on Diseases of Fish and Shellfish, Dublin, Ireland.
Source: orbit
Source-ID: 242045
Research output: Research › Poster – Annual report year: 2001

Pathogenicity of viral haemorrhagic septicaemia virus (VHSV) for whitefish (Coregonus lavaretus)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Skall, H. F., Olesen, N. J.
Publication date: 2001
Peer-reviewed: No
Event: Abstract from 10th International Conference on Diseases of Fish and Shellfish, Dublin, Ireland.
Source: orbit
Source-ID: 241646
Research output: Research › Conference abstract for conference – Annual report year: 2001

Rainbow trout offspring with different resistance to viral haemorrhagic septicaemia
To study immunological and immunogenetical parameters related to resistance against viral haemorrhagic septicaemia (VHS), attempts to make gynogenetic strains of rainbow trout selected for high and low resistance to VHS were initiated in 1988. The first gynogenetic generation of inbreeding resulted in the more resistant offspring E8 and the low resistance offspring K3; the K3 offspring having the same high mortality as the susceptible reference strain of outbred trout in infection trials. A second gynogenetic generation derived from the E8 strain resulted in some low resistance offspring, and
two gynogenetic families in which all, or nearly all, fish survived challenge with VHS virus. In this study, an attempt to associate the distribution of different MHC class II genotypes with low and high resistance gynogenetic offspring was performed. Two different MHC haplotypes could be distinguished, and in both low and high resistance families all three genotypes were found, which could be explained by the fact that the mother fish carried the heterozygous genotype. Although no significant differences in MHC IE genotypes were found between the high and low resistance offspring, a significantly different distribution of haplotypes in the low resistance offspring was observed, that could not be explained by a one- or two-locus model.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Slierendrecht, W., Olesen, N. J., Juul-Madsen, H., Lorenzen, N., Henryon, M., Berg, P., Søndergaard, J., Koch, C.
Pages: 155-167
Publication date: 2001
Peer-reviewed: Yes

Publication information
Journal: Fish & Shellfish Immunology
Volume: 11
Issue number: 2
ISSN (Print): 1050-4648
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 3.37 SJR 1.126 SNIP 1.103
Web of Science (2017): Impact factor 3.185
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.36 SJR 1.128 SNIP 1.142
Web of Science (2016): Impact factor 3.148
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.19 SJR 1.265 SNIP 1.16
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.92 SJR 1.14 SNIP 1.098
Web of Science (2014): Impact factor 2.674
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.11 SJR 0.997 SNIP 1.138
Web of Science (2013): Impact factor 3.034
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.02 SJR 1.156 SNIP 1.169
Web of Science (2012): Impact factor 2.964
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.52 SJR 1.209 SNIP 1.262
Web of Science (2011): Impact factor 3.322
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
RT-PCR for identification of vhsv and ihnv in infected cell cultures– a comparative sensitivity test

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Bergmann, S., Einer-Jensen, K., Skall, H. F., Enzmann, P., Fichtner, D., Olesen, N. J.
Publication date: 2001
Peer-reviewed: No
Event: Abstract from 10th International Conference on Diseases of Fish and Shellfish, Dublin, Ireland.
Source: orbit
Source-ID: 230750
Research output: Research - peer-review › Journal article – Annual report year: 2001

Surveillance of fish diseases in the Nordic countries

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Håstein, T., Hellström, A., Jonsson, G., Olesen, N. J., Pärnänen, E.
Pages: 43-50
Publication date: 2001
Peer-reviewed: Yes

Publication information
Journal: Acta Veterinaria Scandinavica
Issue number: Suppl. 94
The first isolation of a rhabdovirus from perch (Perca fluviatilis) in Norway

A rhabdovirus was isolated from perch (Perca fluviatilis) harvested from lake Arungen in the South-Eastern part of Norway. The fish were placed in indoor tanks for reproduction studies. A few days after the introduction, fish showed swimming disturbances and lethargy, and a low mortality was observed during a period of several months. No gross or histopathological changes were observed. The virus was isolated from moribund fish in BF-2 cells. An extensive cytopathic effect (CPE) was observed, and examination of infected cell cultures by electron microscopy demonstrated virus particles with a morphology consistent with that of rhabdoviruses. The viral genome consists of RNA as shown by using specific metabolic inhibitors. The virus was further characterized by immunofluorescence (IF) and a plaque neutralization test using a panel of different antisera against several fish rhabdoviruses. The virus was stained in IF with rabbit antisera against perch rhabdovirus, pike rhabdovirus and lake trout rhabdovirus and neutralised by anti perch rhabdovirus indicating that the Norwegian perch virus is closely related to these viruses belonging to the Vesiculovirus genus of the family Rhabdoviridae. This is the first time a rhabdovirus has been detected in perch in Norway, and it indicates that viruses belonging to this group might be more widespread in nature than previously assumed.

**General information**

State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Dannevig, B., Olesen, N. J., Jentoft, S., Kvellestad, A., Taksdal, T., Hastein, T.
Pages: 186-194
Publication date: 2001
Peer-reviewed: Yes

**Publication information**

Journal: Bulletin of the European Association of Fish Pathologists
Volume: 21
Issue number: 5
ISSN (Print): 0108-0288
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.5 SJR 0.268 SNIP 0.404
Web of Science (2017): Impact factor 0.448
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.49 SJR 0.222 SNIP 0.41
Web of Science (2016): Impact factor 0.431
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.64 SJR 0.265 SNIP 0.48
Web of Science (2015): Impact factor 0.346
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.68 SJR 0.345 SNIP 0.435
Web of Science (2014): Impact factor 0.373
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.62 SJR 0.384 SNIP 0.428
Web of Science (2013): Impact factor 0.565
ISI indexed (2013): ISI indexed yes
The first isolation of a rhabdovirus from perch (Perca fluviatilis) in Norway

A rhabdovirus was isolated from perch (Perca fluviatilis) harvested from lake Arungen in the South-Eastern part of Norway. The fish were placed in indoor tanks for reproduction studies. A few days after the introduction, fish showed swimming disturbances and lethargy, and a low mortality was observed during a period of several months. No gross or histopathological changes were observed. The virus was isolated from moribund fish in BF-2 cells. An extensive cytopathic effect (CPE) was observed, and examination of infected cell cultures by electron microscopy demonstrated virus particles with a morphology consistent with that of rhabdoviruses. The viral genome consists of RNA as shown by using specific metabolic inhibitors. The virus was further characterized by immunofluorescence (IF) and a plaque neutralization test using a panel of different antisera against several fish rhabdoviruses. The virus was stained in IF with rabbit antisera against perch rhabdovirus, pike rhabdovirus and lake trout rhabdovirus and neutralised by anti perch rhabdovirus indicating that the Norwegian perch virus is closely related to these viruses belonging to the Vesiculovirus genus of the family Rhabdoviridae. This is the first time a rhabdovirus has been detected in perch in Norway, and it indicates that viruses belonging to this group might be more widespread in nature than previously assumed.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Dannevig, B., Olesen, N. J., Jentoft, S., Kvellestad, A., Taksdal, T., Hastein, T.
Pages: 145-153
Publication date: 2001
Peer-reviewed: Yes
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<td>Scopus Rating</td>
<td>SJR 0.474</td>
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Towards an effective management tool for marine viral haemorrhagic septicaemia virus (VHSV) (P-271)

**General information**

State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Snow, M., Raynard, R., King, J., Skall, H. F., Olesen, N. J.
Publication date: 2001
Peer-reviewed: No
Event: Poster session presented at 10th International Conference on Diseases of Fish and Shellfish, Dublin, Ireland.
Source: orbit
Source-ID: 242044
Research output: Research › Poster – Annual report year: 2001

Two immunogenetical parameters in five Danish rainbow trout (Oncorhynchus mykiss) strains and their relation to body weight

The distribution of different phenotypes of the complement component C3 and a possible correlation with body weight were investigated in five Danish strains (A, C, D, E, J) of farmed trout (Oncorhynchus mykiss Walbaum). All strains showed the presence of the f1 and f2 alleles; two of these strains also expressed the s allele. Most common was the f1 allele (>68%); rarest was the s allele (<9% or absent). In the J strain, a significantly higher frequency of the f1 allele was observed. Only in the D strain was a linkage indicated between the mean values of body weight of trout and different C3 phenotypes (P = 0.002); the mean body weight of individuals with the f1 phenotype was also lower than that of the f1/f2 and s/f1 phenotypes. This result, however, is not conclusive, as it was observed in only one of the five strains and because the number of individuals in some of the phenotype groups was very small. The reactivity of monoclonal antibody Hyb106-1 that reacts with a carbohydrate epitope on the serum immunoglobulin molecule was also investigated in the five rainbow trout strains. The percentage of positively reacting trout sera varied from 9% to 43%. In the D and the E strains, positive individuals showed a significantly (P = 0.036, resp. P = 0.005) lower body weight than did the negative individuals. No linkage between the reactivity with monoclonal antibody Hyb106-1 and the f1 and f2 alleles of complement component C3 was observed. However, individuals that reacted negatively with the carbohydrate marker expressed only the s allele, possibly caused by a low number of samples expressing the s allele.

**General information**

State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Slierendrecht, W., Olesen, N. J.
Pages: 35-38
Publication date: 2001
Peer-reviewed: Yes

**Publication information**

Journal: Journal of Applied Ichthyology-zeitschrift Fur Angewandte Ichthyologie
Volume: 17
Issue number: 1
ISSN (Print): 0175-8659
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.93
Web of Science (2017): Impact factor 0.774
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.94
Web of Science (2016): Impact factor 0.845
Web of Science (2016): Indexed yes
Comparison of nucleotide sequences for the major capsid protein of the pike-perch (Stizostedion lucioperca), cod (Gadus morhua) and other piscine or amphibian iridovirus isolates

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Hannele, T., Paulin, L., Ariel, E., Huovilainen, A., Olesen, N. J.
Publication date: 2000
Peer-reviewed: No
Event: Abstract from 13th International Symposium for Poxvirus and Iridovirus, Montpellier, France.
Source: orbit
Source-ID: 241690
Research output: Research › Conference abstract for conference – Annual report year: 2000

Isolation of Birnavirus serogroup B in wild and aquacultured fish species
During cruises with Danish research vessels more than 17,000 wild marine fish belonging to 41 different species were sampled and examined virologically. Birnavirus serogroup B was isolated from 7 marine fish species: plaice (Pleuronectes platessa), dab (Limanda limanda), flounder (Platichthys flesus), smear dab (Microstomus kitt), long rough dab (Hippoglossoides platessoides), cod (Gadus morhua) and grey gurnard (Eutrigla gurnardus) with 43 of the 45 isolations coming from flatfish. Birnavirus serogroup B seems to be endemic in the North Sea close to Denmark and in the Skagerrak and the Kattegat. Surveillance of aquacultured fish, mainly rainbow trout (Oncorhynchus mykiss), for VHS, IHN.
and IPN, in Denmark during the previous 30 years, have resulted in Birnavirus serogroup B isolations twice. These isolations were from healthy rainbow trout. Samples sent to the Danish Veterinary Laboratory for virological examination and characterisation have revealed the presence of Birnavirus serogroup B in haddock (ML Melanogrammus aeglefinus), plaice and dab from wild marine fish caught by Irish fishermen and from Icelandic farmed halibut (Hippoglossus hippoglossus).

**General information**

State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Skall, H. F., Mellergaard, S., Olesen, N. J.
Pages: 229-236
Publication date: 2000
Peer-reviewed: Yes

**Publication information**

Journal: Bulletin of The European Association of Fish Pathologists
Volume: 20
Issue number: 6
ISSN (Print): 0108-0288
Ratings:
- BFI (2018): BFI-level 1
- Web of Science (2018): Indexed yes
- BFI (2017): BFI-level 1
- Scopus rating (2017): CiteScore 0.5 SJR 0.268 SNIP 0.404
- Web of Science (2017): Impact factor 0.448
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 1
- Scopus rating (2016): CiteScore 0.49 SJR 0.222 SNIP 0.41
- Web of Science (2016): Impact factor 0.431
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
- Scopus rating (2015): CiteScore 0.64 SJR 0.265 SNIP 0.48
- Web of Science (2015): Impact factor 0.346
- BFI (2014): BFI-level 1
- Scopus rating (2014): CiteScore 0.68 SJR 0.345 SNIP 0.435
- Web of Science (2014): Impact factor 0.373
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 1
- Scopus rating (2013): CiteScore 0.62 SJR 0.384 SNIP 0.428
- Web of Science (2013): Impact factor 0.565
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): CiteScore 0.47 SJR 0.257 SNIP 0.491
- Web of Science (2012): Impact factor 0.554
- ISI indexed (2012): ISI indexed yes
- BFI (2011): BFI-level 1
- Scopus rating (2011): CiteScore 0.41 SJR 0.246 SNIP 0.47
- Web of Science (2011): Impact factor 0.288
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 1
- Scopus rating (2010): SJR 0.349 SNIP 0.531
- Web of Science (2010): Impact factor 0.414
- BFI (2009): BFI-level 1
- Scopus rating (2009): SJR 0.296 SNIP 0.461
- BFI (2008): BFI-level 1
Nordic Manual for the Surveillance and diagnosis of infectious diseases in farmed salmonids

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Number of pages: 100
Publication date: 2000

Publication information
Publisher: Nordic Council of Ministers
ISBN (Print): 92-89-30462-6
Original language: English
Source-ID: 241525
Research output: Research - peer-review › Book – Annual report year: 2000

Serological comparison of the Finnish and Danish iridovirus isolates with reference to other piscine and amphibian iridovirus isolates

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Ariel, E., Tapiovara, H., Olesen, N. J.
Publication date: 2000
Peer-reviewed: No
Event: Abstract from 13th International Symposium for Poxvirus and Iridovirus, Montpellier, France.
Source-ID: 241693
Research output: Research › Conference abstract for conference – Annual report year: 2000

Assessment of five years as the Community Reference Laboratory for Fish Diseases

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J.
Publication date: 1999

Host publication information
Title of host publication: Proceedings International Aquaculture Conference : Towards the year 2000: What changes in aquaculture
Immunity to VHS virus in rainbow trout

Viral hemorrhagic septicemia virus (VHSV) is the rhabdovirus that causes most disease problems in farmed rainbow trout in Europe. Survivors of infection are usually immune to reinfection but as with other fish viruses, development of a modern recombinant vaccine has been complicated by the limited knowledge of the immune mechanisms and antigens involved in induction of immunity. Neutralizing and protective monoclonal antibodies recognize the envelope glycoprotein (G protein)
which is the only viral protein known to be present on the surface of the virus particle. Immunoblotting analyses with monoclonal antibodies as well as with sera from immunized trout have indicated that protein conformation plays an important role in neutralization epitopes. The virus neutralizing activity often found in sera from convalescent trout is highly dependent on a poorly defined complementing activity in normal trout serum. Attempts to demonstrate involvement of the complement component C3 were not successful, but inhibition experiments indicated that the classical pathway for complement activation was needed. Being the target of neutralizing antibodies, the G protein is an obvious candidate for a recombinant vaccine. However, recombinant forms of the G protein expressed in Escherichia coli have been poorly immunogenic in fish, presumably due to incorrect protein conformation. Expression in insect cells has resulted in more potent products but, more recently, considerably higher levels of protection were found following vaccination with naked DNA encoding the G protein under the control of a CMV promotor. Genetic resistance to VHS would be a desirable alternative to vaccination but the time required to obtain this makes it a long-time goal. Results from breeding programs in France and Denmark nevertheless indicate that such a strategy may provide considerable improvement in resistance.
Inter-laboratory comparison of cell lines for susceptibility to three viruses: VHSV, IHNV and IPNV

Eleven European National Reference Laboratories participated in an inter-laboratory comparison of the susceptibility of 5 selected cell lines to 3 fish pathogenic viruses. The test included viral hemorrhagic septicaemia virus (VHSV), infectious hematopoietic necrosis virus (IHNV) and infectious pancreatic necrosis Virus (IPNV), and the cell lines derived from bluegill fry (BF-2), chinook salmon embryo (CHSE-214), epithelioma papulosum cyprini (EPC), fathead minnow (FHM) and rainbow trout gonad (RTG-2). The results showed that for isolation of VHSV, BF-2 and RTG-2 cells performed equally well and had higher sensitivity compared to the other cell Lines. For IHNV, EPC and FHM cells gave the best results, and for IPNV it was BF-2 and CHSE-214 cells. FHM cells showed the largest variability among laboratories, whereas EPC was the cell line showing the smallest variability.

General information

State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Lorenzen, E., Carstensen, B., Olesen, N. J.
Pages: 81-88
Publication date: 1999
Peer-reviewed: Yes

Publication information

Journal: Diseases of Aquatic Organisms
Volume: 37
Issue number: 2
ISSN (Print): 0177-5103
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.7 SJR 0.675 SNIP 0.95
Web of Science (2017): Impact factor 1.543
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.95 SJR 0.893 SNIP 0.92
Web of Science (2016): Impact factor 1.549
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.96 SJR 0.973 SNIP 0.943
Web of Science (2015): Impact factor 1.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.86 SJR 0.895 SNIP 0.889
Web of Science (2014): Impact factor 1.752
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.77 SJR 0.831 SNIP 0.928
Web of Science (2013): Impact factor 1.586
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.04 SJR 0.919 SNIP 1.092
Web of Science (2012): Impact factor 1.734
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.29 SJR 1.12 SNIP 1.164
Web of Science (2011): Impact factor 2.201
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.918 SNIP 0.948
Web of Science (2010): Impact factor 1.572
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.897 SNIP 0.985
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.865 SNIP 0.995
Scopus rating (2007): SJR 0.951 SNIP 1.05
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.875 SNIP 0.966
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.909 SNIP 1.033
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.992 SNIP 1.097
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.942 SNIP 1.188
Isolation of viral haemorrhagic septicaemia virus (VHSV) from wild marine fish species in the Baltic Sea, Kattegat, Skagerrak and the North Sea

In order to analyse the occurrence of viral haemorrhagic septicaemia virus (VHSV) in the marine environment surrounding Denmark, fish tissue samples were collected on four cruises with the research vessel H/S Dana in 1996 and 1997. The sampling comprised 923 samples totalling 7344 fish representing 29 different species. VHSV was isolated from 24 fish samples from the Baltic Sea, four samples from Skagerrak and three samples from the North Sea. The virus-positive host species included herring Clupea harengus (11 isolates), sprat Sprattus sprattus (eight isolates), cod Gadus morhua (six isolates), rockling Rhinonemus cimbrius (one isolate), Norway pout Trisopterus esmarkii (one isolate), blue whiting Micromesistius poutassou (one isolate), whiting Merlangius merlangus (two isolates) and lesser argentine Argentina sphyraena (one isolate). VHSV has previously been reported from cod and herring, but not from the other five species. A virus belonging to serogroup II of the aquatic birnaviruses was isolated from three samples of flounder Platichthys flesus and three samples of dab Limanda limanda and a virus preliminarily identified as iridovirus (lymphotystis virus) was isolated from seven samples of long rough dab Hippoglossoides platessoides. (C) 1999 Elsevier Science B.V. All rights reserved.
Isolation of viral haemorrhagic septicaemia virus (VHSV) in the marine environment (O-012)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Mortensen, H. F., Olesen, N. J., Mellergaard, S.
Publication date: 1999
Peer-reviewed: No
Event: Abstract from 9th International Conference on Diseases of Fish and Shellfish, Rhodos, Greece.
Source: orbit
Source-ID: 241643

Research output: Research › Conference abstract for conference – Annual report year: 1999
Production of neutralizing antisera against viral hemorrhagic septicemia (VHS) virus by intravenous injections of rabbits

Rabbit antisera against viral hemorrhagic septicemia virus (VHSV) produced by two immunization procedures were compared for neutralization and immunochemical properties against homologous and heterologous strains. The VHSV isolate used as the immunogen was a member of a serogroup not neutralized by previously available antisera. The results from this study suggested that frequent intravenous (IV) injections of rabbits with viral antigens were superior to adjuvant-mediated, combined subcutaneous and intraperitoneal (SC/IP) injections for the production of neutralizing antisera. All IV injected rabbits produced high neutralization titers against the homologous VHSV isolate but not against an isolate from a different serogroup. The SC/IP injected rabbits had no significant neutralization titers against either the homologous VHSV strain or two isolates of a heterologous VHSV strain. Sera from all injected rabbits reacted in indirect immunofluorescence (IF) assays with either strain; however, the SC/IP injected rabbits produced higher titers against the heterologous VHSV strain by ELISA (enzyme-linked immunosorbent assay). By Western blotting, neutralizing antisera primarily stained the viral glycoprotein (G) whereas the nonneutralizing sera stained all the viral structural proteins equally well. Our results demonstrate that immunization procedures to produce antisera against VHSV in rabbits determine whether the resultant antibodies will have primarily neutralizing or binding capabilities.
Rhabdovirusinfektioner

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Lorenzen, N., Olesen, N. J.
Number of pages: 219
Pages: 142-147
Publication date: 1999

Host publication information
Title of host publication: Fiskehelse og fiskesykdommer
Place of publication: Oslo, Norway
Publisher: Universitesforlaget
ISBN (Print): 82-00-12718-4
Source: orbit
Source-ID: 241522
Research output: Research - peer-review › Journal article – Annual report year: 1999

Virulence of marine isolates of viral haemorrhagic septicaemia virus in atlantic salmon and turbot. (O-015)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Raynard, R., King, J., Snow, M., Munro, A., Olesen, N. J., Mortensen, H. F.
Publication date: 1999
Peer-reviewed: No
Event: Abstract from 9th International Conference on Diseases of Fish and Shellfish, Rhodos, Greece.
Source: orbit
Source-ID: 241645
Research output: Research › Conference abstract for conference – Annual report year: 1999

Virulence of marine isolates of viral haemorrhagic septicaemia virus in rainbow trout

General information
State: Published
Virulence of marine isolates of viral haemorrhagic septicaemia virus in rainbow trout (P-178)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Mortensen, H. F., Olesen, N. J., Raynard, R.
Publication date: 1999
Peer-reviewed: No
Event: Abstract from 9th International Conference on Diseases of Fish and Shellfish, Rhodos, Greece.
Source: orbit
Source-ID: 241680
Research output: Research › Conference abstract for conference – Annual report year: 1999

Isolation and characterisation of VHSV from the marine environment (OP-40)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Mortensen, H. F., Olesen, N. J.
Publication date: 1998
Peer-reviewed: No
Event: Abstract from 4th International Symposium on Viruses of Lower Vertebrates, Weymouth, United Kingdom.
Source: orbit
Source-ID: 241642
Research output: Research › Conference abstract for conference – Annual report year: 1998

Isolation and characterization of VHSV from the marine environment

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Mortensen, H., Olesen, N. J.
Publication date: 1998
Peer-reviewed: No
Event: Abstract from 4th International Symposium on Viruses of Lower Vertebrates, Weymouth, United Kingdom.
Source: orbit
Source-ID: 241668
Research output: Research › Conference abstract for conference – Annual report year: 1998

Isolation of an iridovirus from pike-perch Stizostedion lucioperca
We have isolated a large virus from pike-perch Stizostedion lucioperca fingerlings with no signs of disease. The biochemical, structural, and serological properties of this newly isolated virus suggest that it belongs to the family Iridoviridae. The virus multiplied and was cytopathogenic in several cultured fish cell lines. The virus has a DNA-containing genome and is assembled in the cytoplasm. When viewed in electron micrographs, the assembly sites showed a paracrystalline array of hexagonal nucleocapsids. The ultrastructure of the pike-perch virus resembled that of previously isolated fish iridoviruses. It is an enveloped icosahedral DNA virus. The diameter of the nucleocapsid in thin sections was 127 +/- 3 nm; in negatively stained preparations the size of the enveloped virus varied from 147 to 187 nm. In immunofluorescence the virus was stained by rabbit antisera against EHN (epizootic haematopoietic necrosis) virus, sheatfish iridovirus and cod iridovirus. The pathogenicity of the virus isolate was studied by inoculation into juvenile rainbow trout Oncorhyncus mykiss. Experimental infection under aquarium conditions suggested that the virus is apathogenic to rainbow trout. The infective virus could be recovered from the viscera of inoculated fish during the first week post-infection, after which the proportion of virus-positive fish declined over time. A small proportion of the fish still carried the virus 24 d post-inoculation.
Sanitation of viral haemorrhagic septicaemia (VHS)

A sanitation programme for stamping-out viral haemorrhagic septicaemia (VHS) was implemented in Denmark in 1965. The programme has resulted in a dramatic reduction in the number of infected rainbow trout farms, from approximate to 400 to 26. The programme is carried out on a voluntary basis at the expense of the involved fish farm owners. The fact that financial support for the eradication of VHS and IHN may be made available from the European Union may enhance the efforts towards further eradication of the disease in Europe. The finding of a VHS virus (VHSV)-like virus in the marine environment is a matter of major concern, but improved diagnostic procedures may enable discrimination between the highly pathogenic freshwater strains and the apparently less virulent marine strains.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J.
Pages: 173-177
Publication date: 1998
Peer-reviewed: Yes

Publication information
Journal: Journal of Applied Ichthyology
Volume: 14
Issue number: 3-4
ISSN (Print): 0175-8659
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.93
Web of Science (2017): Impact factor 0.774
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.94
Web of Science (2016): Impact factor 0.845
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Characterization of isolates of Flavobacterium psychrophilum associated with coldwater disease or rainbow trout fry syndrome II: serological studies

The possibility of serological differentiation between isolates of Flavobacterium psychrophilum was analyzed by ELISA and slide agglutination. Twenty-five Danish isolates and 20 isolates from other European countries were studied using polyclonal rabbit antisera and whole-cell preparations. Unabsorbed as well as reciprocally absorbed antisera and purified Ig preparations derived from the antisera were included. Most of the isolates originated from clinical outbreaks of rainbow trout fry syndrome (RTFS) or coldwater disease (CWD), but some were isolated from asymptomatic fish or from other fish species with different disease signs. The ELISA showed the existence of different serotypes most distinctly, but slide agglutination supported the ELISA results. Three serotypes were found among the isolates studied: 1 major serotype (serotype Th) represented most of the Danish isolates and isolates from other European countries; 2 minor serotypes (Serotypes Ed and Fp(T)) also occurred. Serotype Th could be further divided into a major subtype, Th-1, and a minor subtype, Th-2. Serotype Fp(T) was defined by the type strain F. psychrophilum NCIMB 1947(T), and seemed to include mostly isolates from asymptomatic fish or from fish species other than rainbow trout.
Control And Eradication Of Fish Diseases

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Korsholm, H.
Publication date: 1997
Peer-reviewed: No
Event: Abstract from International workshop on Aquaculture Application of Controlled Drug and Vaccine Delivery, Udine, Italy.
Control measures for viral diseases in aquaculture: eradication of VHS and IHN

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Korsholm, H.
Publication date: 1997
Peer-reviewed: No
Event: Abstract from 8th International Conference Diseases of Fish and Shellfish, Edinburgh, United Kingdom.
Source: orbit

Control measures for viral diseases in aquaculture: Eradication of VHS and IHN

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Korsholm, H.
Pages: 229-233
Publication date: 1997
Peer-reviewed: No

Publication information
Journal: Bulletin of the European Association of Fish Pathologists
Volume: 17
Issue number: 6
ISSN (Print): 0108-0288
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.5 SJR 0.268 SNIP 0.404
Web of Science (2017): Impact factor 0.448
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.49 SJR 0.222 SNIP 0.41
Web of Science (2016): Impact factor 0.431
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.64 SJR 0.265 SNIP 0.48
Web of Science (2015): Impact factor 0.346
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.68 SJR 0.345 SNIP 0.435
Web of Science (2014): Impact factor 0.373
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.62 SJR 0.384 SNIP 0.428
Web of Science (2013): Impact factor 0.565
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 0.47 SJR 0.257 SNIP 0.491
Web of Science (2012): Impact factor 0.554
First demonstration of Renibacterium salmoninarum/ BKD in Denmark

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, National Food Institute
Contributors: Lorenzen, E., Olesen, N. J., Korsholm, H., Heuer, O. E., Evensen, Ø.
Pages: 140-144
Publication date: 1997
Peer-reviewed: No

Publication information
Journal: Bulletin of the European Association of Fish Pathologists
Volume: 17
ISSN (Print): 0108-0288
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.5 SJR 0.268 SNIP 0.404
Web of Science (2017): Impact factor 0.448
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.49 SJR 0.222 SNIP 0.41
Web of Science (2016): Impact factor 0.431

First demonstration of Renibacterium salmoninarum/ BKD in Denmark

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, National
Food Institute
Contributors: Lorenzen, E., Olesen, N. J., Korsholm, H., Heuer, O. E., Evensen, Ø.
Pages: 140-144
Publication date: 1997
Peer-reviewed: No

Publication information
Journal: Bulletin of the European Association of Fish Pathologists
Volume: 17
ISSN (Print): 0108-0288
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.5 SJR 0.268 SNIP 0.404
Web of Science (2017): Impact factor 0.448
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.49 SJR 0.222 SNIP 0.41
Web of Science (2016): Impact factor 0.431
Immunohistochemical detection of VHS virus in paraffin-embedded specimens of rainbow trout (Oncorhynchus mykiss); The influence of primary antibody, fixative, and antigen unmasking on method sensitivity

The influence of the primary antibody, the fixative, and the antigen unmasking technique on the method sensitivity of immunohistochemistry as a method for the identification of viral hemorrhagic septicemia (VHS) virus in paraffin-embedded specimens of naturally infected rainbow trout (Oncorhynchus mykiss) was examined. Fish (200-300 g) were collected during an outbreak of VHS. Parallel specimens from liver, spleen, kidney, and brain were fixed by immersion in 10% phosphate-buffered formalin, periodate-lysine-paraformaldehyde (PLP), Bouin's fluid, or absolute ethanol. Virus cultivation was also performed on parallel specimens, and the virus titer (TCID50/ml) was determined. Purified nucleocapsid protein (N-protein) of the virus was incorporated in an artificial antigen substrate (polymerized bovine serum albumin), fixed as
described above, and embedded in paraffin wax. Microwave unmasking was performed on formalin-, PLP-, and Bouin's fluid-fixed specimens. The presence of virus peptides in situ or N-protein in the artificial antigen substrates was visualized using an immunohistochemical method based on alkaline phosphatase or peroxidase and one polyclonal and five monoclonal polypeptide-specific antibodies. VHS virus was identified in situ in specimens with high virus titers (10^7-8 TCID50/ml) regardless of the fixative and without the need of an unmasking procedure. A pronounced masking effect was observed for the cross-linking formalin and PLP fixatives. Regardless of the primary antibodies used, there was a significantly higher epidemiologic sensitivity (the proportion of virus positive samples that tested positive by immunohistochemistry) using ethanol and Bouin's fluid compared with formalin and PLP.

**General information**

**State:** Published  
**Organisations:** Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute  
**Contributors:** Evensen, O., Olesen, N. J.  
**Pages:** 253-261  
**Publication date:** 1997  
**Peer-reviewed:** Yes
Isolation of an iridovirus from pike-perch Stizostedion lucioperca

General Information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Tapiovaara, H., Von Bonsdorff, C., Lindén, J., Olesen, N. J., Rimaila-Pänänen, E.
Publication date: 1997
Peer-reviewed: No
Event: Abstract from 4th Nordic Symposium on Fish Immunology, Hirtshals, Denmark.
Source: orbit
Source-ID: 241666
Research output: Research › Conference abstract for conference – Annual report year: 1997

Isolation of VHSV from the marine environment

General Information
State: Published
Organisations: National Food Institute, Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Heuer, O. E., Olesen, N. J., Lorenzen, N., Otte, L.
Publication date: 1997
Peer-reviewed: No
Event: Abstract from 8th International Conference Diseases of Fish and Shellfish, Edinburgh, United Kingdom.
Source: orbit
Source-ID: 241665
Research output: Research › Conference abstract for conference – Annual report year: 1997

Isolering og karakterisering af VHS virus fra saltvandsfisk

General Information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J.
Pages: 129-130
Publication date: 1997
Peer-reviewed: No

Publication Information
Journal: Ferskvandsfiskeribladet
Volume: 95
MHC Polymorphism in rainbow trout families with different resistance to VHS

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Slierendrecht, W., Olesen, N. J., Lorenzen, N., Juul-Madsen, H., Søndergaard, J., Henryon, M., Berg, P., Koch, C.
Publication date: 1997
Peer-reviewed: No
Event: Abstract from 4th Nordic Symposium on Fish Immunology, Hirtshals, Denmark.
Source: orbit
Source-ID: 241667
Research output: Research › Conference abstract for conference – Annual report year: 1997

Påvisning af bakteriel nyresyge (BKD) hos regnbueørred i Danmark.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, National Food Institute
Contributors: Lorenzen, E., Korsholm, H., Olesen, N. J., Heuer, O. E.
Pages: 160-167
Publication date: 1997
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 95
Issue number: 7
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 241558
Research output: Research › Journal article – Annual report year: 1997

SJVF forskningsprogrammet “Sygdomsforebyggelse, genetik og ernæring ved produktion af regnbueørred”

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J.
Pages: 3-5
Publication date: 1997
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 95
Sygdomsforebyggelse, genetik og ernæring ved produktion af regnbueørred: Forskningsaktiviteter på Statens Veterinære Serumlaboratorium i Århus.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J.
Pages: 3-5
Publication date: 1997
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 95
Issue number: 1
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: English
Source: orbit
Source-ID: 241556
Research output: Research › Journal article – Annual report year: 1997

Vaccination of rainbow trout against VHS using live attenuated vaccines: Danish field trials from 1978 to 1983.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Lorenzen, E., Lorenzen, N.
Number of pages: 462
Publication date: 1997

Host publication information
Title of host publication: Developments in Biologicals
Volume: 90
Publisher: Karger
Source: orbit
Source-ID: 241670
Research output: Research › Conference abstract in proceedings – Annual report year: 1996

Sammendrag af undersøgelser vedr. yngeldødelighedssyndromet. Afsnit 1

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Lorenzen, E., Olesen, N. J.
Pages: 35-39
Publication date: 1996
Peer-reviewed: No
Sammendrag af undersøgelser vedr. yngeldødelighedssyndromet. Afsnit 2

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Lorenzen, E., Olesen, N. J.
Pages: 52-56
Publication date: 1996
Peer-reviewed: No

Virusbetingede fiskesygdomme

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Korsholm, H.
Pages: 6-8
Publication date: 1996
Peer-reviewed: No

Differentiation of VHS virus isolates by use of monoclonal antibodies

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J., Lorenzen, E., Lorenzen, N.
Publication date: 1995
Peer-reviewed: No
Multiplication of VHS virus in insect cells

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Lorenzen, N., Olesen, N. J.
Publication date: 1995
Peer-reviewed: No
Source: orbit
Source-ID: 241593
Research output: Research › Conference abstract for conference – Annual report year: 1995

Outbreaks of IPN in reared fry of Atlantic cod Gadus morhua

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Lorenzen, E., Olesen, N. J., Evensen, Ø., Strum, A.
Publication date: 1995
Peer-reviewed: No
Event: Abstract from 7th International Conference on Diseases of Fish and Shellfish, Palma de Mallorca, Spain.
Source: orbit
Source-ID: 241660
Research output: Research › Conference abstract for conference – Annual report year: 1995

Paired immunohistochemistry for identification of VHSV and IHNV in paraffin-embedded specimens of experimentally infected rainbow trout

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Evensen, Ø., Terland, R., Castric, J., Olesen, N. J.
Publication date: 1995
Peer-reviewed: No
Event: Abstract from 7th International Conference on Diseases of Fish and Shellfish, Palma de Mallorca, Spain.
Source: orbit
Source-ID: 241661
Research output: Research › Conference abstract for conference – Annual report year: 1995

Simultaneous demonstration of Flexibacter psychrophilus and IPN virus in formaline fixed paraffin embedded rainbow trout fry

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Lorenzen, N., Olesen, N. J., Evensen, Ø.
Publication date: 1995
Peer-reviewed: No
Event: Abstract from The Nordic Symposium on Fish Immunology, Reykjavik, Iceland.
Source: orbit
Source-ID: 241657
Research output: Research › Conference abstract for conference – Annual report year: 1995

Use of polymerase chain reaction (PCR) for differentiation of serological similar VHS virus isolates from Europe and America.
A multi-disciplinary Danish research programme on rainbow trout (Oncorhynchus mykiss) farming.

Antibody response in rainbow trout vaccinated against viral haemorrhagic septicaemia (VHS) with inactivated virus

Comparison of four different fixatives for immunohistochemical identification of viral haemorrhagic septicaemia virus in paraffin-embedded tissue specimens from rainbow trout

Enzyme-linked immunosorbent assay (Elisa) for the detection of viral haemorrhagic septicaemia virus (VHSV).
Expression of the VHS virus glycoprotein in insect cells

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Lorenzen, N., Christensen, J., Etzerodt, M., Jørgensen, P., Olesen, N. J.
Publication date: 1993
Peer-reviewed: No
Event: Abstract from 6th International Conference of the European Association of Fish Pathologists, Brest, France.
Source: orbit
Source-ID: 241583
Research output: Research › Conference abstract for conference – Annual report year: 1993

Expression of the VHS virus glycoprotein in insect cells

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Lorenzen, N., Christensen, J., Etzerodt, M., Jørgensen, P., Olesen, N. J.
Publication date: 1993
Peer-reviewed: No
Event: Abstract from 6th International Conference of the European Association of Fish Pathologists, Brest, France.
Source: orbit
Source-ID: 241581
Research output: Research › Conference abstract for conference – Annual report year: 1993

Infectious hematopoietic necrosis virus

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Olesen, N. J., Jensen, L., Jørgensen, P., Lorenzen, N.
Publication date: 1993
Peer-reviewed: No
Event: Abstract from 6th International Conference of the European Association of Fish Pathologists, Brest, France.
Source: orbit
Source-ID: 241582
Research output: Research › Conference abstract for conference – Annual report year: 1993

Serological studies on Danish isolates of Flexibacter psychrophilus associated with coldwater disease or rainbow trout fry syndrome

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Lorenzen, E., Olesen, N. J.
Publication date: 1993
Peer-reviewed: No
Event: Abstract from International Conference of the European Association of Fish Pathologists, Brest, France.
Source: orbit
Source-ID: 241589
Research output: Research › Conference abstract for conference – Annual report year: 1993
The role of complement in antibody mediated neutralization of a fish rhabdovirus

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Lorenzen, N., Olesen, N. J., Jørgensen, P., Jensen, L., Koch, C.
Publication date: 1993
Peer-reviewed: No
Event: Abstract from The Nordic Symposium on Fish Immunology, Lysekil, Sweden.
Source: orbit
Source-ID: 241588
Research output: Research › Conference abstract for conference – Annual report year: 1993

Vaccination trials on rainbow trout fry using formaline killed cells of F.psychrophilus

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Lorenzen, E., Olesen, N. J.
Publication date: 1993
Peer-reviewed: No
Event: Abstract from The Nordic Symposium on Fish Immunology, Lysekil, Sweden.
Source: orbit
Source-ID: 241585
Research output: Research › Conference abstract for conference – Annual report year: 1993

Comparative susceptibility of three fish cell lines to Egtved virus, the virus of viral haemorrhagic septicaemia (VHS)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Olesen, N. J., Jørgensen, P.
Pages: 235-237
Publication date: 1992
Peer-reviewed: Yes

Publication information
Journal: Diseases of Aquatic Organisms
Volume: 12
Issue number: 3
ISSN (Print): 0177-5103
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.7 SJR 0.675 SNIP 0.95
Web of Science (2017): Impact factor 1.543
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.95 SJR 0.893 SNIP 0.92
Web of Science (2016): Impact factor 1.549
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.96 SJR 0.973 SNIP 0.943
Web of Science (2015): Impact factor 1.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.86 SJR 0.895 SNIP 0.889
Detection of rainbow trout antibody to Egtved virus by enzyme-linked immunosorbent assay (ELISA), immunofluorescence (IF), and plaque neutralization tests (50 %PNT)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Olesen, N. J., Lorenzen, N., Jørgensen, P.
Detection of the antibody response in rainbow trout following immersion vaccination with Yersinia ruckeri bacterins by ELISA and passive immunization

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J.
Pages: 36-43
Publication date: 1991
Peer-reviewed: Yes

Publication information
Journal: Journal of Applied Ichthyology
Volume: 7
Issue number: 1
ISSN (Print): 0175-8659
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.93
Web of Science (2017): Impact factor 0.774
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.94
Web of Science (2016): Impact factor 0.845
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.84
Web of Science (2015): Impact factor 0.783
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.06
Web of Science (2014): Impact factor 0.867
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.99
Web of Science (2013): Impact factor 0.903
ISI indexed (2013): ISI indexed yes
Infectious Hematopoietic Necrosis (IHN) and Viral Hemorrhagic Septicemia (VHS): Detection of Trout Antibodies to the Causative Viruses by Means of Plaque Neutralization, Immunofluorescence, and Enzyme-Linked Immunosorbent Assay

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Jørgensen, P., Olesen, N. J., Lorenzen, N., Winton, J., Ristow, S.
Pages: 100–108
Publication date: 1991
Peer-reviewed: Yes

Publication information
Journal: Journal of Aquatic Animal Health
Volume: 3
Issue number: 2
ISSN (Print): 0899-7659
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.04 SJR 0.4 SNIP 0.488
Web of Science (2017): Impact factor 1.017
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.09 SJR 0.453 SNIP 0.532
Web of Science (2016): Impact factor 0.906
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.06 SJR 0.557 SNIP 0.684
Web of Science (2015): Impact factor 0.859
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.24 SJR 0.532 SNIP 0.791
Molecular analysis of a viral glycoprotein with a view to vaccine development

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Lorenzen, N., Olesen, N. J., Jørgensen, P., Etzerodt, M., Holtet, T., Thøgersen, H.
Publication date: 1991
Peer-reviewed: No
Event: Abstract from Biokemisk forenings årsmøde, .
Source: orbit
Source-ID: 241236
Research output: Research - peer-review › Journal article – Annual report year: 1991

Paternal Association of Increased Susceptibility to Viral Haemorrhagic Septicaemia (VHS) in Rainbow Trout (Oncorhynchus mykiss)
Farming of rainbow trout (Oncorhynchus mykiss) in Europe is hampered by unacceptably heavy losses due to the severe infectious disease viral haemorrhagic septicaemia (VHS). Strain-dependent variation of VHS resistance exists. A long-term breeding programme to increase VHS resistance in rainbow trout has been started in Denmark. This programme will be based on experimental VHS challenge of the parental fish (n = 84) as well as their normal and gynogenetic offspring (16 fullsib F1 groups). We found a paternal influence on the average VHS resistance of the offspring; partial regression coefficients for sire-offspring were estimated at 0.30 ± 0.09 and for dam-offspring at −0.1 ± 0.12.
Rapid detection of viral haemorrhagic septicaemia virus in fish by ELISA

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Olesen, N. J., Jørgensen, P.
Pages: 183-186
Publication date: 1991
Peer-reviewed: Yes

Publication information
Journal: Journal of Applied Ichthyology
Volume: 7
Issue number: 3
ISSN (Print): 0175-8659
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.93
Web of Science (2017): Impact factor 0.774
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.94
Web of Science (2016): Impact factor 0.845
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.84
Web of Science (2015): Impact factor 0.783
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Serological differentiation of Egtved virus (VHSV) using neutralizing monoclonal and polyclonal antibodies

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Olesen, N. J., Lorenzen, N., Jørgensen, P.
Publication date: 1991
Peer-reviewed: No
Event: Abstract from 5th International Conference on Diseases of fish and shellfish, Budapest, Hungary.
Source: orbit
Source-ID: 241575
Research output: Research › Conference abstract for conference – Annual report year: 1991

Antibody response to VHS virus glycoprotein in rainbow trout

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Lorenzen, N., Olesen, N. J., Jørgensen, P.
Publication date: 1990
Peer-reviewed: No
Event: Abstract from 1st Nordic Symposium on Fish Immunology, Tromsø, Norway.
Source: orbit
Source-ID: 241575
Neutralization of Egtved virus pathogenicity to cell cultures and fish by monoclonal antibodies to the viral G protein

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Lorenzen, N., Olesen, N. J., Jørgensen, P.
Pages: 561-567
Publication date: 1990
Peer-reviewed: Yes

Publication information
Journal: Journal of General Virology
Volume: 71
Issue number: 3
ISSN (Print): 0022-1317
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.68 SJR 1.325 SNIP 0.877
Web of Science (2017): Impact factor 2.514
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.93 SJR 1.544 SNIP 0.891
Web of Science (2016): Impact factor 2.838
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.26 SJR 1.738 SNIP 0.998
Web of Science (2015): Impact factor 3.192
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.25 SJR 1.69 SNIP 1.057
Web of Science (2014): Impact factor 3.183
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.64 SJR 1.764 SNIP 1.154
Web of Science (2013): Impact factor 3.529
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.28 SJR 1.525 SNIP 1.034
Web of Science (2012): Impact factor 3.127
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.6 SJR 1.684 SNIP 1.145
Web of Science (2011): Impact factor 3.363
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.678 SNIP 1.053
Web of Science (2010): Impact factor 3.568
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Immunization of rainbow trout with affinity purified Egtved virus proteins, preliminary results.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Lorenzen, N., Olesen, N. J., Jørgensen, P.
Publication date: 1989
Peer-reviewed: No
Event: Abstract from 4th International Conference of the European Association of Fish Pathologists, Santiago de Compostela, Spain.
Source: orbit
Source-ID: 241574
Research output: Research › Conference abstract for conference – Annual report year: 1989

Monoclonal antibodies against Egtved virus glycoprotein: Application in development of a subunit vaccine

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Lorenzen, N., Olesen, N. J., Jørgensen, P.
Publication date: 1989
Peer-reviewed: No
Event: Poster session presented at Annual Meeting of Scandinavian Society for Immunology, Copenhagen, Denmark, .
Source: orbit
Source-ID: 241573
Research output: Research › Poster – Annual report year: 1989
Monoclonal antibodies against Egtved virus structural proteins: Application in diagnosis and vaccine development

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Lorenzen, N., Olesen, N. J., Jørgensen, P.
Publication date: 1989
Peer-reviewed: No
Event: Abstract from 6th International Conference on Comparative and Applied Virology, Banff, Canada.
Source: orbit
Source-ID: 241571
Research output: Research › Conference abstract for conference – Annual report year: 1989

Monoclonal antibodies used in the development of a genetically engineered vaccine against a fish virus

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Lorenzen, N., Olesen, N. J., Jørgensen, P.
Publication date: 1989
Peer-reviewed: No
Event: Abstract from 7th International Congress of Immunology, Berlin, Germany.
Source: orbit
Source-ID: 241572
Research output: Research › Conference abstract for conference – Annual report year: 1989

Isolation of an IPN-like virus belonging to the serogroup II of the aquatic birnaviruses from dab, Limanda limanda L.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Olesen, N. J., Jørgensen, P. V., Bloch, B., Mellergaard, S.
Pages: 449 - 451
Publication date: 1988
Peer-reviewed: Yes

Publication information
Journal: Journal of Fish Diseases
Volume: 11
Issue number: 5
ISSN (Print): 0140-7775
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.82
Web of Science (2017): Impact factor 2.004
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Impact factor 2.138
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Impact factor 2.053
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Production and Characterization of Monoclonal Antibodies to Four Egtved Virus Structural Proteins

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Lorenzen, N., Olesen, N. J., Jørgensen, P.
Pages: 35-42
Publication date: 1988
Peer-reviewed: Yes

Publication information
Journal: Diseases of Aquatic Organisms
Issue number: 4
ISSN (Print): 0177-5103
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Serological examination of a rhabdovirus isolated from snakehead (Ophicephalus striatus) in Thailand with ulcerative syndrome

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Ahne, W., Jørgensen, P. V., Olesen, N. J., Wattanavijarn, W.
Pages: 194 - 196
Publication date: 1988
Peer-reviewed: Yes

Publication information
Journal: Journal of Applied Ichthyology
Volume: 4
Issue number: 4
ISSN (Print): 0175-8659
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.93
Web of Science (2017): Impact factor 0.774
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.94
Web of Science (2016): Impact factor 0.845
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.84
Web of Science (2015): Impact factor 0.783
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.06
Web of Science (2014): Impact factor 0.867
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.99
Web of Science (2013): Impact factor 0.903
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 0.99
Web of Science (2012): Impact factor 0.902
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.04
Web of Science (2011): Impact factor 0.869
ISI indexed (2011): ISI indexed yes
**Detection of Egtved virus and rainbow trout antibody to Egtved virus by enzyme-linked immunosorbent assay (ELISA).**

**General information**
- **State:** Published
- **Organisations:** Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
- **Contributors:** Olesen, N. J., Lorenzen, N., Jørgensen, P.
- **Publication date:** 1987
- **Peer-reviewed:** No
- **Event:** Abstract from 3rd International Conference of the European Association of Fish Pathologists, Bergen, Norway.
- **Source:** orbit
- **Source-ID:** 241570

**Bibliographical note**
- **Original language:** Danish
- **Licentiathishandling, KVL
- **Source:** orbit
- **Source-ID:** 241552

**Research output:** Research › Conference abstract for conference – Annual report year: 1987

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**Egtved virus: Specifikke antistoffer i regnbueørreder og i kaniner undersøgt ved hjælp af biologiske og immunkemiske metoder**

**General information**
- **State:** Published
- **Organisations:** Unknown
- **Contributors:** Olesen, N. J.
- **Publication date:** 1987

**Publication information**
- **Original language:** Danish

**Bibliographical note**
- **Licentiathishandling, KVL
- **Source:** orbit
- **Source-ID:** 241552

**Research output:** Research › Ph.D. thesis – Annual report year: 1987

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**Passive protection of rainbow trout (Salmo gairdneri) against Egtved virus with monoclonal antibodies.**

**General information**
- **State:** Published
- **Organisations:** Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
- **Contributors:** Lorenzen, N., Jørgensen, P., Olesen, N. J.
- **Publication date:** 1987
- **Peer-reviewed:** No
- **Event:** Abstract from International Meeting on Fish Immunology, Plymouth, England.
- **Source:** orbit
- **Source-ID:** 241569

**Research output:** Research › Conference abstract for conference – Annual report year: 1987
Detection of neutralizing antibody to Egtved virus in rainbow trout (Salmo gairdneri) by plaque neutralization test with complement addition

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Olesen, N. J., Jørgensen, P.
Pages: 33-41
Publication date: 1986
Peer-reviewed: Yes

Publication information
Journal: Journal of Applied Ichthyology
Volume: 2
Issue number: 1
ISSN (Print): 0175-8659
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.93
Web of Science (2017): Impact factor 0.774
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.94
Web of Science (2016): Impact factor 0.845
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.84
Web of Science (2015): Impact factor 0.783
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.06
Web of Science (2014): Impact factor 0.867
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.99
Web of Science (2013): Impact factor 0.903
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 0.99
Web of Science (2012): Impact factor 0.902
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.04
Web of Science (2011): Impact factor 0.869
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Impact factor 0.945
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
BFI (2008): BFI-level 1
Web of Science (2008): Indexed yes
Web of Science (2001): Indexed yes
Quantification of serum immunoglobulin in rainbow trout Salmo gairdneri under various environmental conditions

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Olesen, N. J., Jørgensen, P. V.
Pages: 183-189
Publication date: 1986
Peer-reviewed: Yes

Publication information
Journal: Diseases of Aquatic Organisms
Volume: 1
ISSN (Print): 0177-5103
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.7 SJR 0.675 SNIP 0.95
Web of Science (2017): Impact factor 1.543
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.95 SJR 0.893 SNIP 0.92
Web of Science (2016): Impact factor 1.549
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.96 SJR 0.973 SNIP 0.943
Web of Science (2015): Impact factor 1.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.86 SJR 0.895 SNIP 0.889
Web of Science (2014): Impact factor 1.752
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.77 SJR 0.831 SNIP 0.928
Web of Science (2013): Impact factor 1.586
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.04 SJR 0.919 SNIP 1.092
Web of Science (2012): Impact factor 1.734
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.29 SJR 1.12 SNIP 1.164
Web of Science (2011): Impact factor 2.201
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
virus: Occurrence of strains not clearly identifiable by means of virus neutralization tests

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Ahne, W., Jørgensen, P., Olesen, N. J., Schäfer, W., Steinhagen, P.
Pages: 187-189
Publication date: 1986
Peer-reviewed: Yes

Publication information
Journal: Journal of Applied Ichthyology
Volume: 2
Issue number: 4
ISSN (Print): 0175-8659
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.93
Web of Science (2017): Impact factor 0.774
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.94
Web of Science (2016): Impact factor 0.845
Web of Science (2016): Indexed yes
In vivo absorption of rabbit antisera for use in immunofluorescence studies of virus diseases in fish

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Jørgensen, P., Olesen, N. J.
Publication date: 1985
Peer-reviewed: No
Event: Abstract from 2nd International Conference of the European Association of Fish Pathologists, Montpellier, France.
Source: orbit
Source-ID: 241229
Research output: Research - peer-review › Journal article – Annual report year: 1986

Observation on enteric redmouth in Denmark

General information
State: Published
Organisations: Section for Fish Diseases, National Institute of Aquatic Resources, National Veterinary Institute, Section of Fish Diseases, Division of Poultry, Fish and Fur Animals
PKD i 1984: Forsøg vedr. tidspunkt for smitteoverførsel under dambrugsforhold samt en status over sygdommens hidtidige forløb i Danmark

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J.
Pages: 126-129
Publication date: 1985
Peer-reviewed: No

Publication Information
Journal: Ferskvandsfiskeribladet
Volume: 83
Issue number: 5
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 241549
Research output: Research » Journal article – Annual report year: 1985

Rainbow trout immunoglobulin: Estimate of concentration under various holding conditions.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Olesen, N. J., Jørgensen, P.
Publication date: 1985
Peer-reviewed: No
Event: Abstract from 2nd International Conference of the European Association of Fish Pathologists, Montpellier, France.
Source: orbit
Source-ID: 241568
Research output: Research » Conference abstract for conference – Annual report year: 1985

Rødmundsyge (ERM): Forsøg med kunstig infektion af nystrøgne ørredæg.

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Jørgensen, P., Olesen, N. J.
Pages: 403-405
Publication date: 1985
Peer-reviewed: No

Publication Information
Journal: Ferskvandsfiskeribladet
Volume: 85
Issue number: 5
ISSN (Print): 0015-0223
Dambrug kan afskærmes mod fugle med net

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J.
Pages: 158-158
Publication date: 1983
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 81
Issue number: 6
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 241551
Research output: Research › Journal article – Annual report year: 1985

Egtvedsyge (VHS) i fritlevende regnbueørreder

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute,
Technical University of Denmark
Contributors: Olesen, N. J., Jørgensen, P.
Pages: 130-132
Publication date: 1983
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 81
Issue number: 5
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 241540
Research output: Research › Journal article – Annual report year: 1983

Egtvedsyge (VHS) på danske dambrug, 1970 til 1982 - en epidemiologisk undersøgelse

General information
State: Published
Fiskehjører kan overføre Egtvedvirus

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Olesen, N. J., Jørgensen, P.
Pages: 69-71
Publication date: 1983
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 81
Issue number: 3
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 241536
Research output: Research › Journal article – Annual report year: 1983

Forebyggelse af ørredudslip fra dambrug

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute
Contributors: Olesen, N. J.
Pages: 159-161
Publication date: 1983
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 81
Issue number: 6
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
Har fritlevende regnbueørreder en karakteristisk skælstruktur

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Olesen, N. J.
Pages: 128-129
Publication date: 1983
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 81
Issue number: 5
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 241538
Research output: Research › Journal article – Annual report year: 1983

Indflydelse af vandtemperatur og smitteintensitet på egtvedsygens forløb

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Jørgensen, P., Olesen, N. J.
Pages: 196-201
Publication date: 1983
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 81
Issue number: 7
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 241542
Research output: Research › Journal article – Annual report year: 1983


General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Vurdering af mulighederne for bekæmpelse af Egtvedsygen (VHS)

General information
State: Published
Organisations: Section of Fish Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Technical University of Denmark
Contributors: Jørgensen, P., Olesen, N. J.
Pages: 228-237
Publication date: 1983
Peer-reviewed: No

Publication information
Journal: Ferskvandsfiskeribladet
Volume: 81
Issue number: 8
ISSN (Print): 0015-0223
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 241543
Research output: Research › Journal article – Annual report year: 1983

Projects:

Vaccination of Seabass against a lethal viral disease and characterization of protective immunity
Barsøe, S., PhD Student, National Veterinary Institute
Olesen, N. J., Main Supervisor, National Veterinary Institute
Lorenzen, N., Supervisor, National Veterinary Institute
Institut stipendie (DTU)
01/12/2017 → 30/11/2020
Award relations: Vaccination of Seabass against a lethal viral disease and characterization of protective immunity
Project: PhD

Piscine orthoreovirus in salmonids: geographic distribution, molecular characterization, pathogenesis under experimental conditions
Vendramin, N., PhD Student, National Veterinary Institute
Olesen, N. J., Main Supervisor, National Veterinary Institute
Rimstad, E., Supervisor
Institut stipendie (DTU)
01/12/2016 → 30/11/2019
Identification of virulence markers in two Novirhabdoviruses causing serious diseases in fish
Alencar, A. L. F., PhD Student, National Veterinary Institute
Olesen, N. J., Main Supervisor, National Veterinary Institute
Bremont, M., Supervisor
Rasmussen, T. B., Supervisor, National Veterinary Institute
Samfinansieret - Andet
15/07/2016 → 14/07/2019
Award relations: Identification of virulence markers in two Novirhabdoviruses causing serious diseases in fish
Project: PhD

Flavobacterium psychrophilum, forebyggelse og immunforsvar
Henriksen, M. M. M., PhD Student, National Veterinary Institute
Dalsgaard, I., Main Supervisor, National Institute of Aquatic Resources
Buchmann, K., Supervisor
Kania, P., Supervisor
Lorenzen, N., Supervisor, National Veterinary Institute
Olesen, N. J., Examiner, National Veterinary Institute
Aasted, B., Examiner
Wiklund, T. C. O., Examiner
Aasted, B., Examiner
Wiklund, T. C. O., Examiner
Institut stipendie (DTU) Samf.
15/06/2010 → 26/02/2014
Award relations: Flavobacterium psychrophilum, forebyggelse og immunforsvar
Project: PhD

Improved vaccination strategies in marine aquaculture
Lorenzen, N., Project Manager, National Veterinary Institute, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases
Rasmussen, J. S., Project Participant, National Veterinary Institute, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases
Lorenzen, E., Project Participant, National Veterinary Institute, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases
Olesen, N. J., Project Participant, National Veterinary Institute, Division of Poultry, Fish and Fur Animals, Section of Fish Diseases
Dalsgaard, I., Project Manager, National Institute of Aquatic Resources
Pedersen, K., Project Manager, University of Copenhagen  
Buchmann, K., Project Participant, University of Copenhagen  
Juel Hansen, P., Project Manager, University of Copenhagen  
Henriksen, N. H., Project Manager, Danish Aquaculture Association  
Hørlyck, V., Project Manager, Aller Aqua A/S  
Engell-Sørensen, K., Project Manager, Fishlab  
Nielsen, T., Project Manager, Aquasearch Ova Aps  
Madsen, S. B., Project Participant, Aquasearch Ova Aps  
Nylén, J., Project Manager, Schering Plough, Animal Health,  
Melingen, G. O., Project Participant, Schering Plough, Animal Health,  
Project ID: 22452  
Forskningsprojekter - Andre ministerier og styrelser: DKK1,444,780.00  
01/04/2008 → 30/09/2012  
Collaborators: Schering Plough, Animal Health, Aller Aqua A/S, Schering-Plough A/S, University of Copenhagen, Aquasearch Ova Aps, Fishlab, Danish Aquaculture Association  
Award relations: Improved vaccination strategies in marine aquaculture  
Project: Research  

Udvikling af mere følsomme laboratoriemetoder til påvisning af virus og virus-antistoffer i ørreder udsat for smitte med Egtved virus, årsagen til sygdommen VHS på dambrug  
Olesen, N. J., Project Manager  
Jørgensen, P. E. V., Project Participant, Danish Board of Technology  
Ukendt  
01/01/1982 → 01/01/1984  
Collaborators: Danish Board of Technology  
Award relations: Udvikling af mere følsomme laboratoriemetoder til påvisning af virus og virus-antistoffer i ørreder udsat for smitte med Egtved virus, årsagen til sygdommen VHS på dambrug  
Project: Research  

Activities:  

Total immunoglobulin hos regnbueørred: Vurdering af IgM-koncentration i sera fra regnbueørreder fra forskellige miljøer  
Period: 1 Jan 1985  
Niels Jørgen Olesen (Participant)  
Division of Poultry, Fish and Fur Animals  
Section of Fish Diseases  
National Veterinary Institute  
Description  
Head: Niels Jørgen Olesen  
Related external organisation  
SVS, Statens Veterinære Seruminstitut, Århus  
Activity: Other  

Fiskesygdomme på EDB  
Period: 1 Jan 1984  
Niels Jørgen Olesen (Participant)  
Division of Poultry, Fish and Fur Animals  
Section of Fish Diseases  
National Veterinary Institute  
Description  
Head: Niels Jørgen Olesen  
Related external organisation  
Den Kongelige Veterinær og Landbohøjskole
Activity: Other