World Organisation for Animal Health

Ole Bendik Dale - - NORWAY

WOAH Reference Laboratory Reports Activities 2024

This report has been submitted: 14 février 2025 11:54

LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	Infectious salmon anaemia
***Address of laboratory:**	Elizabeth Stephansens vei 1, 1433 Ås , Norway
***Tel:**	+47-23 21 60 00
***E-mail address:**	postmottak@vetinst.no
Website:	https://www.vetinst.no/en
***Name (including Title) of Head of Laboratory (Responsible Official):**	Dr Gun Peggy Strømstad Knudsen, CEO
***Name (including Title and Position) of WOAH Reference Expert:**	DVM PhD Ole Bendik Dale, Senior researcher
***Which of the following defines your laboratory? Check all that apply:**	Governmental Research agency

TOR1: DIAGNOSTIC METHODS

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

Diagnostic Test	Indicated in WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
Histopathology	Yes	94	0
Immunohistochemistry	Yes	250	0
Direct diagnostic tests		Nationally	Internationally
Real-time RT-PCR	Yes	3925	0

Cell culture isolation	Yes	43	0

TOR2: REFERENCE MATERIAL

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by WOAH?

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOAH Members?

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

No

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
Whole genome sequencing	doi: 10.3389/fmicb.2024.1392607. PMID: 38873156; PMCID: PMC11169708.

7. Did your laboratory validate diagnostic methods according to WOAH Standards for the designated pathogen or disease?

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

No

9. Did your laboratory validate vaccines according to WOAH Standards for the designated pathogen or disease?

No

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAH Members?

No

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAH Member?

No

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH Members other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	WOAH Member Countries involved other than your country
ISA virulence studies	2024 - ongoing	Establish methods to assess virulence of ISAV	Marcelo Cortez (University of Santiago of Chile)	CHILE

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

Yes

Research need : 1

Please type the Research need: Validation of diagnostic methods acc to WOAH standards

Relevance for WOAH Standard Setting,

Relevance for the Code or Manual Manual,

Field Epidemiology and Surveillance, Diagnostics,

Animal Category Aquatic,

Disease:

Infection with infectious salmon anaemia virus

Kind of disease (Zoonosis, Transboundary diseases)

If any, please specify relevance for Codes or Manual, chapter and title

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

Answer: Aquatic Manual chp 2.3.4 Table 4.1 OIE recommended diagnostic methods and their level of validation for surveillance of apparently healthy animals and investigation of clinically affected animals

Notes:

Answer:

TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

No

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

Yes

If the answer is yes, please provide details of the data collected:
https://www.vetinst.no/rapporter-og-publikasjoner/rapporter/2024/fishhealthreport-2023

16. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category and list the details in the box)

a) Articles published in peer-reviewed journals:

6

Publications (peer ref – pubmed) with NVI authors contributing

Spilsberg B, Leithaug M, Christiansen DH, Dahl MM, Petersen PE, Lagesen K, Fiskebeck EMLZ, Moldal T, Boye M. Development and application of a whole genome amplicon sequencing method for infectious salmon anemia virus (ISAV). Front Microbiol. 2024 May

30;15:1392607. doi: 10.3389/fmicb.2024.1392607. PMID: 38873156; PMCID: PMC11169708.
Dahl LOS, Hak S, Braaen S, Molska A, Rodà F, Parot J, Wessel Ø, Fosse JH, Bjørgen H, Borgos SE, Rimstad E. Implementation of mRNA-Lipid Nanoparticle Technology in Atlantic Salmon (Salmo salar). Vaccines (Basel). 2024 Jul 18;12(7):788. doi: 10.3390/vaccines12070788. PMID: 39066426; PMCID: PMC11281423.
Belghit I, Liland NS, Lundebye AK, Tibon J, Sindre H, Nilsen H, Hagemann A, Sele V. Aquaculture sludge as feed for black soldier fly: Transfer of chemical and biological contaminants and nutrients. Waste Manag. 2024 Oct 1;187:39-49. doi: 10.1016/j.wasman.2024.07.005. Epub 2024 Jul 10. PMID: 38991389.
Malzahn AM, Sele V, Belghit I, Tibon J, Nilsen H, Sindre H, Liland NS, Hagemann A. Transfer and bioaccumulation of chemical and biological contaminants in the marine polychaete Hediste diversicolor (OF müller 1776) when reared on salmon aquaculture sludge. J Environ Manage. 2024 Sep;367:122073. doi: 10.1016/j.jenvman.2024.122073. Epub 2024 Aug 3. PMID: 39098079.
Benedicenti O, Dahle MK, Makvandi-Nejad S, Andresen AMS, Moldal T, Sindre H, Fosse JH. The Atlantic salmon gill transcriptional response to natural infection with HPR0-ISAV (Isavirus salaris) in three Norwegian smolt farms. Fish Shellfish Immunol. 2025 Feb;157:110096. doi: 10.1016/j.fsi.2024.110096. Epub 2024 Dec 24. PMID: 39724996.

b) International conferences:

0
Bi-annual EAFP conference coming up 2025

c) National conferences:

1
HAVBRUK 22.–24. oktober 2024: Påvisning av ILAV HPR0 i ulike matrikser. Torfinn Moldal, Mona Dverdal Jansen, Hilde Sindre, NVI.

d) Other (Provide website address or link to appropriate information):

2
Open Webinar 17th September 2024: New knowledge on ISA-virus in farmed Salmon Ny kunnskap om ILA.Arr: Norwegian Veterinary Institute (NVI) , presentations by Edgar Brun, Torfinn Moldal, Hilde Sindre, Johanna Fosse, Bjørn Spilsberg, Simon Weli from NVI, and Michelle Peñaranda Institute of Marine Research Norway (IMR). Presentation of results project ILA-SAFE (FHF 901674) by Hilde Sindre PowerPoint-presentasjon (vetinst.no)
Open Webinar 10th December 2024. Outcome of allowing on-growth in the sea of ISA-vaccinated, but ISAV-infected salmon. Arr: Norwegian Veterinary Institute (NVI) and Norwegian Food Safety Authority (MT). Presentations by Ingunn Sommerset, Sonal Patel NVI and Magnhild Daltveit (MT)

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH Members?

No

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
NS-EN ISO/IEC 17025 (2005)	see file, same as last report - valid 2023-26	Akkrediteringsdokument 13.01.23.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Flexible accreditation for real-time RT-PCR methods including ME07_181: ISAV matrix real time RT-PCR	Norwegian Accreditation, member of EA

20. Does your laboratory maintain a "biorisk management system" for the pathogen and the disease concerned?

Yes

The QA system approved by Norwegian accreditation includes a bioriskmanagement system protecting staff and environment through biosecurity measures up to BSL-3 level

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAH?

No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAH?

No

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

23. Did your laboratory exchange information with other WOAH Reference Laboratories designated for the same pathogen or disease?

Yes

24. Do you network (collaborate or share information) with other WOAH Reference Laboratories designated for the same pathogen?

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen during the past 2 years?

No

There are no interlab proficency tests at present

26. Did your laboratory collaborate with other WOAH Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

No

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOAH Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-	Role of your reference	No. participating		WOAH Member

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laboratory test comparisons1	laboratory (organizer/participant)	laboratories	Name of the test	Countries
The EU-RL Annual Interlaboratory Proficiency Test	Participant	21	ISAV RT-PCR	DENMARK,

TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOAH?

No

29. Additional comments regarding your report:

Yes

NVI has expanded research actitivites on ISA which already are resulting on more knowledge being published, and more will come.