WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 27 avril 2023 09:53

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Infectious haematopoietic necrosis
Address of laboratory:	1011 of Fuqiang Road, Futianqu, Shenzhen, Guangdong Province, 518045, P. R. China
Tel.:	86 755 25592980
E-mail address:	709274714@qq.com
Website:	
Name (including Title) of Head of Laboratory (Responsible Official):	Tikang Lu
Name (including Title and Position) of WOAH Reference Expert:	Hong Liu
Which of the following defines your laboratory? Check all that apply:	Governmental

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
Direct diagnostic tests		Nationally	Internationally
cell culture (EPC, GCO, BF-2)	Yes	87	0
conventional RT-PCR	yes	87	0
Real-time RT-PCR	yes	87	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?

Yes

TYPE OF REAGENT AVAILABLE	RELATED DIAGNOSTIC TEST	PRODUCED/ PROVIDE	AMOUNT SUPPLIED NATIONALLY (ML, MG)	AMOUNT SUPPLIED INTERNATIONALLY (ML, MG)	NO. OF RECIPIENT WOAH MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
cell line	virus isolation	provide	100 mL	0	1	Asia and Pacific
positive tissues	virus isolation, conveontional RT-PCR and real-time RT-PCR	produced and provide	23 mg	0	1	Asia and Pacific

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

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

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
real-time quantitative isothermal	in writing
digital RT-PCR	Jia P, Purcell MK, Pan G, Wang J, Kan S, Liu Y, Zheng X, Shi X, He J, Yu L, Hua Q, Lu T, Lan W, Winton JR, Jin N, Liu H. Analytical validation of a reverse transcriptase droplet digital PCR (RT-ddPCR) for quantitative detection of infectious hematopoietic necrosis virus. J Virol Methods. 2017 Jul;245:73-80. doi: 10.1016/j.jviromet.2017.03.010. Epub 2017 Mar 24. PMID: 28347708.
CRISPR+real-time quantitative isothermal	in writing

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?

Yes

NAME OF WOAH MEMBER COUNTRY SEEKING ASSISTANCE	DATE	WHICH DIAGNOSTIC TEST USED	NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT	NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES
CHINA (PEOPLE'S REP. OF)	2022-12-01	virus isolation and conventional RT-PCR	39	10

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

Yes

NAME OF THE WOAH MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
CHINA (PEOPLE'S REP. OF)	improve the ability to quarantine on the eyed-eggs and fry of rainbow trout	by e-mail and we-chat to give the suggestion and directions

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
The whole genome analysis of IHNV isolates collected from worldwide	2022-2025	Describe the relation between the viral virulence and gene.	USGS Western Fisheries research center, USA	UNITED STATES OF AMERICA

TOR6: EPIZOOLOGICAL DATA

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

Yes

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:
1. P. R. China carried the domestic surveillance in 2021 with 102 samples collected from the national to local hatchery farms and growing-up farms. Only 1 sample was positive, showing that the infection of IHNV only distributed in very limited zones which is benefit from the fruitful prevention and control measures of aquatic animal health in China. (cited from the status analyzing report of important aquatic animal diseases in P. R. China, published by China Agriculture Press, 2022) 2. The status of the infection of IHNV is as follows (WOAH WAHIS): 1) Austria-present in 2021 and 2022 2) P. R. China- suspect in limited zones in 2021 and 2022 3) Denmark- present in limited zones in 2021 and present in 2022 4) Estonia- present in limited zones in 2021 and absent in 2022 5) Finland- present in limited zones in 2021 and 2022 6) France- present in limited zones in 2022

7) Germany- present in 2021 and 2022
8) Iran- present in 2021 and no data available in 2022
9) Italy- present in limited zones in 2021 and 2022
10) Japan- present in 2021 and 2022
11) Netherland- present in 2021 and absent in 2022
12) North Macedonia- present in limited zones in 2021 and no data available in 2022

1 present 2 present in limited zones 3 infection 4 infection in limited zones
5 suspect 6 suspect in limited zones 7 absent 8 never reported 9 no information

3.
1) This study has revealed for the first time the presence of IHNV in rainbow trout in North Macedonia (Cvetkovikj A, Radosavljevic V, Cuenca A, Strojmanovska B, Maksimovic-Zoric J, Cvetkovikj I, Olesen NJ. First detection of infectious haematopoietic necrosis virus in farmed rainbow trout in North Macedonia. Dis Aquat Organ. 2020 Sep 3;140:219-225. doi: 10.3354/dao03507. PMID: 32880379.)
2) Phylogenetic analysis revealed that the detected strains (Jahad-UT1 and Jahad-UT2 isolates) are closely related (97.23%-100%) to European isolates within genogroup 'E' (Ziafati Kafi Z, Ghalyanchilangeroudi A, Nikaein D, Marandi A, Rahmati-Holasoo H, Sadri N, Erfanmanesh A, Enayati A. Phylogenetic analysis and genotyping of Iranian infectious haematopoietic necrosis virus (IHNV) of rainbow trout (Oncorhynchus mykiss) based on the glycoprotein gene. Vet Med Sci. 2022 Nov;8(6):2411-2417. doi: 10.1002/vms3.931. Epub 2022 Sep 9. PMID: 36084261; PMCID: PMC9677409.)
3) The present study is the first report of genogroup U IHNV infection in China (Huo C, Ma Z, Li F, Xu F, Li T, Zhang Y, Jiang N, Xing W, Xu G, Luo L, Sun H. First isolation and pathogenicity analysis of a genogroup U strain of infectious hematopoietic necrosis virus from rainbow trout in China. Transbound Emerg Dis. 2022 Mar;69(2):337-348. doi: 10.1111/tbed.13983. Epub 2021 Jan 29. PMID: 33417745.).
4) VHSV and IHNV isolates in Iran, have originated from Europe possibly via imported eggs (Ahmadivand S, Palić D, Weidmann M. Molecular Epidemiology of Novirhabdoviruses Emerging in Iranian Trout Farms. Viruses. 2021 Mar 10;13(3):448. doi: 10.3390/v13030448. PMID: 33802100; PMCID: PMC7999222.)

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

Yes

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2. The status of the infection of IHNV is as follows (WOAH WAHIS):
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2) P. R. China- suspect in limited zones in 2021 and 2022
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5) Finland- present in limited zones in 2021 and 2022
6) France- present in limited zones in 2022
7) Germany- present in 2021 and 2022
8) Iran- present in 2021 and no data available in 2022
9) Italy- present in limited zones in 2021 and 2022
10) Japan- present in 2021 and 2022
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12) North Macedonia- present in limited zones in 2021 and no data available in 2022

1 present 2 present in limited zones 3 infection 4 infection in limited zones
5 suspect 6 suspect in limited zones 7 absent 8 never reported 9 no information

3.
1) This study has revealed for the first time the presence of IHNV in rainbow trout in North Macedonia (Cvetkovikj A, Radosavljevic V, Cuenc

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:

1
Emmenegger EJ, Bueren EK, Jia P, Hendrix N, Liu H. Comparative virulence of spring viremia of carp virus (SVCV) genotypes in two koi varieties. Dis Aquat Organ. 2022 Mar 17;148:95-112. doi: 10.3354/dao03650. PMID: 35297379.

b) International conferences:

0

c) National conferences:

2
1. Annual meeting on domestic aquatic animal health prevention and control, on line, Nov 8th, 2022
2. Training on improve the detection ability on important aquatic animal diseases, Nov. 22th, 2022

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

0

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit :

b) Seminars : 2

c) Hands-on training courses:

d) Internships (>1 month)

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country

b	P. R. China	20000

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
CNAS-CL05:2009	pdf	centificate-1.pdf
ISO 17025: 2017	pdf	centificate-2.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
virus isolation, conventional RT-PCR and real-time RT-PCR	China national accreditation service for conformity assessment (CNAS)

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

Yes

BSL-2 accredited for spring viraemia of carp virus and infectious haematopoietic necrosis A separate room (BSL-2) for sample treament and virus isolation

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. Are you a member of a network of WOAH Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.
improve the ability of virus isolaiton and conventional RT-PCR on IHNV	Organiser	23	0

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

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.

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?

Yes

TITLE OF THE PROJECT OR CONTRACT	SCOPE	NAME(S) OF RELEVANT WOAH REFERENCE LABORATORIES
The whole genome analysis of IHNV isolates collected from worldwide	Epidemiology	USGS Western Fisheries research center, USA

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?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOAH Member Countries
Improve the ability of real-time RT-PCR on IHNV	Organizer	6	Asia and Pacific

TOR12: EXPERT CONSULTANTS

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

29. Additional comments regarding your report: