World Organisation for Animal Health

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WOAH Collaborative Centre Reports Activities 2024

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CENTRE INFORMATION

***Title of WOAH Collaborating Centre**	Reference Materials of Molecular Diagnostic Techniques in Aquatic and Terrestrial Animal Diseases
***Address of WOAH Collaborating Centre**	NIFS (National Institute of Fisheries Science, under the Ministry of Oceans and Fisheries, MOF) and APQA (Animal and Plant Quarantine Agency, under Ministry of Agriculture, Food and Rural Affairs, MAFRA)
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Website:	
***Name Director of Institute (Responsible Official):**	Yongseok Choi (NIFS) & Jung-hee Kim (APQA)
***Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):**	Hyoung Jun Kim, Ph.D. (Senior Researcher) & Kyoung Ki Lee, Ph.D. (Senior Researcher)
***Name of the writer:**	Hyoung Jun Kim

TOR 1 AND 2: SERVICES PROVIDED

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by WOAH

Category	Title of activity	Scope

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Diagnosis, biotechnology and laboratory (true)	Development and Sharing the Reference Materials of Molecular Diagnostic Techniques in Aquatic and Terrestrial Animal Diseases	Reference Materials of Molecular Diagnostic Techniques in Aquatic and Terrestrial Animal Diseases

TOR 3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main fucus area for which you were designated

Proposal title	Scope/Content	Applicabl
Validation of Conventional RT-PCR method for VHSV gene detection using novel 3F2R primer set (updated on WOAH diagnostic manual for VHS)	1. 4.4.2. Conventional RT-PCR & 4.5. Amplicon sequencing; https://www.woah.org/fileadmin/Home/eng/Health_standards/aahm/current/2.3.10_VHS.pdf 2. Validation of a novel one-step reverse transcription PCR method for detecting viral haemorrhagic septicaemia virus. Aquaculture 492, 170-183 3. Importance of the 3'-terminal nucleotide of the forward primer for nucleoprotein gene detection of viral hemorrhagic septicemia virus by conventional reversetranscription PCR. Indian Journal of Microbiology 59(2): 234-236	Laborat Expertis

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

Yes

Research need 1

Please type the Research need: Revision of conventional RT-PCR method for VHSV gene detection in WOAH diagnostic manual for VHS

Relevance for WOAH Disease Control, Capacity Building, Other, Standard Setting, Animal Welfare, Facilitation of international collaboration,

Relevance for the Code or Manual Code, Manual,

Field Epidemiology and Surveillance, Diagnostics, Vaccines, Therapeutics,

Animal Category Terrestrial, Aquatic,

Disease:

Infection with viral haemorrhagic septicaemia virus

Kind of disease (Zoonosis, Transboundary diseases) 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 Chapter 4.4.2. Conventional RT-PCR & 4.5. Amplicon sequencing; https://www.woah.org/fileadmin/Home/eng/Health_standards/aahm/current/2.3.10_VHS.pdf

Notes:

Answer:

4. Did your Collaborating Centre maintain a network with other WOAH Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

Yes

Name of WOAH CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
WOAH reference laboratory for VHS in Denmark (DTU Aqua)	Denmark	Europa	Experiment and validation of multiful PCR positive material for fish & crustacean diseases
WOAH reference laboratory for Bonamia exitiosa, Bonamia ostreae, Marteilia refringens, Marteilia sydneyi in France (IFREMER)	France	Europa	Experiment and validation of multiful PCR positive material for molluscs diseases

TOR 4 AND 5: NETWORKING AND COLLABORATION

5. Did your Collaborating Centre maintain a network with other WOAH Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of WOAH CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
WOAH reference laboratory for VHS in DTU Aqua (European Union reference laboratory for fish and crustacean diseases)	Denmark	Europe	Validation of reference materials for molecular diagnosis of fish diseases
WOAH reference laboratory for Bonamia exitiosa, Bonamia ostreae,			

Marteilia refringens, Marteilia sydneyi in IFREMER (European Union reference laboratory for molluscs)	France	Europe	Validation of reference materials for molecular diagnosis of mollusc diseases

TOR 6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOAH?

Yes

Name of expert	Kind of consultancy	Subject
Dr. Hyoung Jun Kim	Review of WOAH Standards	Review for Chapter 1.1.2. – Validation of diagnostic assays for infectious diseases of aquatic animals

TOR 7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

Yes

To enhance the diagnostic capacity of animal disease in Fiji, we discussed the KOICA program between Korea and Fiji.

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOAH, to personnel from WOAH Members?

Yes

a) Technical visit : 0

b) Seminars : 34

c) Hands-on training courses: 15

d) Internships (>1 month) : 0

Type of technical training provided (a, b, c or d)	Content	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
C	Training for diagnosis of aquatic animal diseases (molecular techniques and cell culture method) methods)	Bangladesh	1
C	Training for diagnosis of aquatic animal diseases (molecular techniques and cell culture method) methods)	Malawi	2

C	Training for diagnosis of aquatic animal diseases (molecular techniques and cell culture method) methods)	Tanzania	2
C	Training for diagnosis of aquatic animal diseases (molecular techniques and cell culture method) methods)	Fiji	2
C	Training for diagnosis of aquatic animal diseases (molecular techniques and cell culture method) methods)	Uganda	1
C	Training for diagnosis of aquatic animal diseases (molecular techniques and cell culture method) methods)	Nigeria	1
C	Training for diagnosis of aquatic animal diseases (molecular techniques and cell culture method) methods)	Indonesia	2
C	Training for diagnosis of aquatic animal diseases (molecular techniques and cell culture method) methods)	Ghana	1
C	Training for diagnosis of aquatic animal diseases (molecular techniques and cell culture method) methods)	Philippines	1
C	Training for diagnosis of aquatic animal diseases (molecular techniques and cell culture method) methods)	Kenya	2
B	11th workshop on diagnosis of animal diseases by WOAH reference laboraqtories of APQA	Malaysis	2
B	11th workshop on diagnosis of animal diseases by WOAH	Mongolia	2

	reference laboraqtories of APQA		
B	11th workshop on diagnosis of animal diseases by WOAH reference laboraqtories of APQA	Sri Lanka	1
B	11th workshop on diagnosis of animal diseases by WOAH reference laboraqtories of APQA	Singapore	2
B	11th workshop on diagnosis of animal diseases by WOAH reference laboraqtories of APQA	Kazakhstan	2
B	11th workshop on diagnosis of animal diseases by WOAH reference laboraqtories of APQA	Thailand	1
B	11th workshop on diagnosis of animal diseases by WOAH reference laboraqtories of APQA	Philippines	2
B	Laboratory trainings on swine diseases for Asian countires	Cambodia	2
B	Laboratory trainings on swine diseases for Asian countires	Indonesia	3
B	Laboratory trainings on swine diseases for Asian countires	Lao PDR	2
B	Laboratory trainings on swine diseases for Asian countires	Philippines	3
B	Laboratory trainings on swine diseases for Asian countires	Vietnam	2

B	Trainings on diagnosis of animal diseases to Vietnamese veterinary officials	Vietnam	10

TOR 8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOAH?

Yes

National/International	Title of event	Co-organiser	Date	Location	No. Participants
Internationally	International Workshop in Korea for Designation of WOAH Collaborating Centre distributing Diagnostic Reference Materials	NIFS & APQA	2024-07-03	Sejong-si in Korea	50

TOR 9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOAH that may be useful to Members of WOAH

a) Articles published in peer-reviewed journals:

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1. Development of a novel strategy to reduce diagnostic errors in real-time polymerase chain reaction using probe-based techniques

2. First Report of Bacterial Kidney Disease (BKD) Caused by Renibacterium salmoninarum in Chum Salmon (Oncorhynchus keta) Farmed in South Korea

3. Improving diagnostic procedures for mass mortality events on aquaculture farms during high temperature periods

4. Prevalence of viral agents causing swine reproductive failure in Korea and the development of multiplex real-time PCR and RT-PCR assays

b) International conferences:

2

In the WOAH general assembly,
New WOAH Collaborating Centre for Reference Materials of Molecular Diagnostic Techniques in Aquatic and Terrestrial Animal diseases

In the Internationa Workshop for new WOAH CC in Korea,
New WOAH Collaborating Centre for Reference Materials of Molecular Diagnostic Techniques in Aquatic and Terrestrial Animal diseases

c) National conferences:

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

11. What have you done in the past year to advance your area of focus, e.g. updated technology?
International validation of multiful PCR positive material for Fish and Molluscs diseases in EU reference laboratories (DTU in Denmark, IFREMER in France)

12. Additional comments regarding your report:
In June 2024, we carried out various activities to obtain WOAH Collaborating Centre status and made efforts within Korea to secure the budget and expert positions required for the Centre's operation. Securing these resources is expected to facilitate the smooth operation of the Collaborating Centre.