

OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-02-18 17:44:05

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Acute hepatopancreatic necrosis disease
Address of laboratory:	Aquaculture Pathology Laboratory The University of Arizona Building 90, 1117 E Lowell St. Tucson Arizona 85721 UNITED STATES OF AMERICA
Tel.:	+1-520 621 8727
Fax:	+1-520 626 5602
E-mail address:	adhar@email.arizona.edu
Website:	https://aquapath.lab.arizona.edu/
Name (including Title) of Head of Laboratory (Responsible Official):	Arun K. Dhar Associate Professor Director, Aquaculture Pathology Laboratory
Name (including Title and Position) of OIE Reference Expert:	Arun K. Dhar
Which of the following defines your laboratory? Check all that apply:	Academic

ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards

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 OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
0	0	0	0
Direct diagnostic tests			
PCR /Real-time PCR	Yes	1292	312
Histology	Yes	111	258

**ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards.
To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.**

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

No

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
Positive Control Tissue	PCR/ Real-time PCR	Produced	1-3 g	1-3 g	5	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Histology slides	Histology	Produced	1	0	2	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Plasmid DNA	PCR/ Real-time PCR	Produced	ng	ng	4	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
BELGIUM	varied	19	0
CANADA	varied	2	0
COLOMBIA	varied	20	0
CZECH REPUBLIC	varied	1	0
ECUADOR	varied	104	0
UNITED KINGDOM	varied	1	0
FRANCE	varied	32	0
GUATEMALA	varied	43	0
INDIA	varied	9	0
INDONESIA	varied	3	0
ISRAEL	varied	6	0
MADAGASCAR	varied	34	0
MEXICO	varied	2	0
THE NETHERLANDS	varied	17	0
NIGER	varied	37	0
NORWAY	varied	1	0
OMAN	varied	21	0
PERU	varied	47	0
RUSSIA	varied	33	0
SINGAPORE	varied	10	0
THAILAND	varied	91	0
UZBEKISTAN	varied	1	0
UNITED STATES OF AMERICA	varied	1405	0
VIETNAM	varied	34	0

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
COLOMBIA	OIE twinning project focused in several pathogens including AHPND	One technical visit to the diagnostic laboratories in Bogota. Also technical visit to a tilapia farm
PERU	Training the diagnostic laboratory of SANIPES (National organism of fisheries).	Technical visit to the diagnostic laboratory in Tumbes, Peru
INDIA	Sponsor project with Government of West Bengal. Training government staff in shrimp pathogen's detection by PCR and histopathology	Virtual training through technical presentations about the main shrimp pathogens

ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
OIE twinning project	2021-on going	To improve the candidate laboratory in compliance with OIE diagnostic standard for crustaceans disease	ICA. Instituto Colombiano Agropecuario	COLOMBIA
OIE twinning project	2018-on going	To improve the candidate laboratory in compliance with OIE diagnostic standard for crustaceans disease	Kingdom Of Saudi Arabia, laboratory Health and safety Fish in Jeddah Research Center	SAUDI ARABIA

ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

11. Did your Laboratory collect epizootiological data relevant to international disease control?

No

If the answer is no, please provide a brief explanation of the situation:
N/A

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

No

If the answer is no, please provide a brief explanation of the situation:
N/A

**13. What method of dissemination of information is most often used by your laboratory?
(Indicate in the appropriate box the number by category)**

a) Articles published in peer-reviewed journals: 04

1. Mai, Hung, N., Aranguren Caro, L. Fernando, Cruz-Flores, R., Noble, Brenda L., and Dhar, Arun K. 2021. Differentially expressed genes in hepatopancreas of acute hepatopancreatic necrosis disease (AHPND) tolerant and susceptible shrimp (*Penaeus vannamei*). *Frontiers in Immunology*, 12:634152.

2. Mai, Hung, N., Aranguren Caro, L. Fernando, Cruz-Flores, R., and Dhar, Arun K. 2021. Development of a Recombinase Polymerase Amplification (RPA) assay for acute hepatopancreatic necrosis disease (AHPND) detection in Pacific white shrimp *Penaeus vannamei*. *Mol. Cell Probes*, 57: 101710.

3. Quinn Powers, Q., Aranguren Caro, L. Fernando, Fitzsimmons, K. M., McLain, J. E., and Dhar, Arun K. 2021. Crayfish (*Cherax quadricarinatus*) susceptibility to acute hepatopancreatic necrosis disease (AHPND). *Journal of Invertebrate Pathology*, 186: 10754.

4. Dhar, Arun K. and Mai, Hung N. 2021. Acute Hepatopancreatic Necrosis Disease (AHPND) and Hepatopancreatic Microsporidiosis (HPM): Two Threats to Sustainable Shrimp Aquaculture. In: *Proceeding of Sustainable Aquaculture & Resource Enhancement, SEAFDEC, Iloilo, Philippines, June 24-26, 2019.*

b) International conferences: 01

1. Arun K. Dhar. 2021. "Major Diseases in Shrimp: Biology & Diagnosis", College of Fisheries Sciences, Pukyong National University, Busan, South Korea, November 23, 2021.

c) National conferences: 02

1. Arun K. Dhar. 2021. "Diseases & Disease Management in Shrimp Aquaculture", National Fisheries School, National Fisheries Institute (NFI), Washington DC, November 09, 2021

2. Hung Nam Mai, Rod Russel R. Alenton and Arun K. Dhar. 2021. Identification of receptors of Pirab Vp binary toxin released by *Vibrio parahaemolyticus* causing acute hepatopancreatic necrosis disease (AHPND) IN *Penaeus vannamei* shrimp. *Aquaculture America, WAS Conference, San Antonio, TX, August 11-14, 2021.*

d) Other:

(Provide website address or link to appropriate information) 01

1. Experts Insight into EMS in Shrimp. The Fish Site-2021:

<https://thefishsite.com/articles/expert-insights-into-ems-in-shrimp>

ToR 7: To provide scientific and technical training for personnel from OIE Member Countries**To recommend the prescribed and alternative tests or vaccines as OIE Standards**

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

Yes

- a) Technical visits: 2
 b) Seminars: 2
 c) Hands-on training courses: 2
 d) Internships (>1 month): 0

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
a	Columbia	10
b	India	7
b	USA, Mexico, Ecuador, Guatemala, Norway, Indonesia, South Korea and Australia	26
c	Peru	3
c	Peru	5

ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

15. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO 17025:2017	UofAZ17025CertScopeV006.pdf
ISO 17043:2010	UofAZAquaculturePTCertScopeV002.pdf
USDA-APHIS	

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Histology for all the OIE-listed pathogens	ANSI-ASQ National Accreditation Board
PCR for all the OIE-listed pathogens	ANSI-ASQ National Accreditation Board

17. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?

No

(See Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4)

ToR 9: To organise and participate in scientific meetings on behalf of the OIE

18. Did your laboratory organise scientific meetings on behalf of the OIE?

No

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

No

ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

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

No

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

No

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

No

ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at: <http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing> see point 1.3

Purpose for inter-laboratory test comparisons ¹	No. participating laboratories	Region(s) of participating OIE Member Countries
Proficiency test in shrimp pathogens detection by PCR August 2021	31	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Proficiency test in shrimp pathogens detection by PCR February 2021	23	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Proficiency test in shrimp pathogens detection by PCR. Ecuadorian shrimp industry	6	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Proficiency test in shrimp pathogens detection by histology	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

ToR 12: To place expert consultants at the disposal of the OIE

24. Did your laboratory place expert consultants at the disposal of the OIE?

No

25. Additional comments regarding your report:

None

