

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 25 avril 2023 12:59

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	White Spot Disease
Address of laboratory:	Aquaculture Pathology Laboratory, School of Animal & Comparative Biomedical Sciences, University of Arizona, 1117 E. Lowell St., , Tucson, Arizona, USA 85721
Tel.:	5206218727
E-mail address:	adhar@arizona.edu
Website:	https://aquapath.lab.arizona.edu/
Name (including Title) of Head of Laboratory (Responsible Official):	Arun K. Dhar, Professor & Director- Aquaculture Pathology Laboratory
Name (including Title and Position) of WOAH Reference Expert:	Arun K. Dhar, Professor & Director- Aquaculture Pathology Laboratory
Which of the following defines your laboratory? Check all that apply:	Academic institution

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
PCR/ Real-time PCR	Yes	1849	

			770
Histopathology	Yes	215	349

TOR2: REFERENCE MATERIAL

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

No

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

Yes

TYPE OF REAGENT AVAILABLE	RELATED DIAGNOSTIC TEST	PRODUCED/ PROVIDE	AMOUNT SUPPLIED NATIONALLY (ML, MG)	AMOUNT SUPPLIED INTERNATIONALLY (ML, MG)	NO. OF RECIPIENT WOA?H MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
Positive Control Tissue	PCR/ Real-time PCR	Produced	200 mg	1300 mg	8	America Asia and Pacific MiddleEast
Histology slides	Histology	Produced		13	1	MiddleEast
Plasmid DNA	PCR/ Real-time PCR	Produced	2-10 mg	9-45 mg	6	America MiddleEast

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA?H Members?

No

TOR3: NEW PROCEDURES

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

No

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

No

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

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

NAME OF WOA?H 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
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BELGIUM		PCR	17	0
BRAZIL		PCR	14	0
CANADA		PCR	3	0
CHILE		PCR	1	0
COLOMBIA		PCR	1	0
DENMARK		PCR	10	0
ECUADOR		PCR	8	0
FRANCE		PCR	77	0
FRENCH POLYNESIA		PCR	39	0
GERMANY		PCR	1	0
HONDURAS		PCR	148	0
INDONESIA		PCR	3	0
ISRAEL		PCR	15	0
MADAGASCAR		PCR	45	0
MEXICO		PCR	59	0
MOZAMBIQUE		PCR	5	0
NORWAY		PCR	7	0
OMAN		PCR	68	0
PERU		PCR	27	0
RUSSIA		PCR	37	0
SPAIN		PCR	2	0
THAILAND		PCR	149	0
THE NETHERLANDS		PCR	13	0
UNITED KINGDOM		PCR	2	0
UNITED STATES OF AMERICA		PCR	1849	0
UZBEKISTAN		PCR	1	0
VIETNAM		PCR	14	0

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

Yes

NAME OF THE WOA MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
COLOMBIA	OIE twinning project focused in several pathogens including WSSV	Conducting a disease diagnostic training in LNDV, ICA, Bogota, Colombia. Also two scientists from LNDV, ICA visited Aquaculture Pathology Laboratory to undergo training on shrimp and fish disease diagnostics.
INDIA	Sponsored project with Government of West Bengal, India. Training staff in Fisheries Department in West Bengal, India on shrimp disease diagnostics.	Conducted several virtual meeting throughout 2022 and conducted an in country training on shrimp disease diagnostics in West Bengal, India.

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

No

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?

No

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:

None.

b) International conferences:

Yes.

1. Arun K. Dhar. 2022. "Discovering Pathogens, Developing Diagnostic Tools & Therapies against Infectious Diseases in Shrimp", 50th Scientific Symposium of the US- Japan Natural Resources Aquaculture Panel, Theme: Control and Management of Aquaculture Disease, November 14- 16, 2022.
2. Dhar, Arun K. 2022. "Developing antiviral therapeutics using reverse genetics approach in shrimp", AQUAEXPO-2023, Camara Nacional de Acuicultura, Guayaquil, Ecuador, Oct 17-20, 2022.
3. Dhar, Arun K. 2022. "Viral Vector for an Oral Delivery of Antiviral Therapeutics in Shrimp", CENAIM, ESPOL, Guayaquil, Ecuador, October 19, 2022.
4. Arun K. Dhar. 2022. "Emergent Diseases and efforts toward developing antiviral therapy in shrimp". Indian Council of Agricultural Research Lecture Series on the occasion of 75th Years of Independence of India, organized by Central Institute of Brackishwater Aquaculture, Chennai, India, July 29, 2022.
5. Arun K. Dhar. 2022. "Discovering Pathogens and Developing Antiviral Therapies in Marine Shrimp Using a Reverse Genetic Approach", West Bengal University of Fishery & Animal Sciences, Kolkata, West Bengal, India, July 14, 2022.
6. Arun K. Dhar. 2022. "Precision Control of Aquatic Animal Diseases". National Chengkung University, Taipei, Taiwan, July 13, 2022.
7. Arun K. Dhar. 2022. "The Race to Identify Shrimp Viral Disease Etiology: Combining Histopathology and Genomics in Pathogen Discovery". National Conference on Virology (Virtual Mode) on "Emerging and Re-emerging Viral Diseases- Climate Change Impacts and Mitigation, Indian Virological Society, March 26-28, 2022.
8. Arun K. Dhar. 2022. "Combining Histopathology and Genomics in the Discovery of New Pathogens in Shrimp". A virtual conference on the 'Application of Modern Biotechnological Tools for Management of Aquatic Genetic Resources', Module 2: Aquatic Animal Disease and Biosecurity, organized by the Indian Council of Agricultural Research (ICAR) and Asia-Pacific Association of Agricultural Research Institutes, Lucknow, India, January 12, 2022.
9. Dhar, Arun K., Cruz Flores, Roberto, Mai, Hung N., Allnutt, F. C. Thomas. 2022. Expediting Pathogen Discovery by Combining Histopathology & Genomics in Shrimp Aquaculture. Aquaculture America 2022 Triennial Conference, World Aquaculture Society, February 28 - March 4, 2022, Town and Country Conference Center San Diego, CA.
10. Alenton, Rod Russel R., mai, Hung N., and Dhar, Arun K. 2022. Reverse-genetics approach in developing a *Macrobrachium rosenbergii* Nodavirus (MrNV)-based viral vector for an oral delivery of therapeutics in shrimp. Aquaculture America 2022 Triennial Conference, World Aquaculture Society, February 28 - March 4, 2022, Town and Country Conference Center San Diego, CA.

11. Trigg, Shelly A., Major, Samuel R., Cruz-Flores, Roberto, Dhar, Arun K., and Bodnar, Andrea. 2022. CRISPR-based diagnostics for disease detection in shrimp. Aquaculture America 2022 Triennial Conference, World Aquaculture Society, February 28 - March 4, 2022, Town and Country Conference Center San Diego, CA.

c) National conferences:

Yes.

Arun K. Dhar. 2022. "Diseases of Shrimp". Davis Thompson Foundation, Gurnee, Illinois, USA, January 18, 2022, <https://davisthompsonfoundation.org/>

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

None

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit :

b) Seminars :

c) Hands-on training courses: Brazil, Colombia, Ecuador, India, Mexico, Norway, USA

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
C	Colombia	10
C	India	6
C	Mexico	1
C	USA	1
C	Shrimp Pathology Short Course (Brazil, Colombia, Ecuador, India, Norway, USA)	10
C	Shrimp disease diagnostic training in Ecuador	40

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO 17025: 2017	Univ. Arizona, 17025 Certificate	UofAZ17025CertScopeV008.pdf
ISO 17043: 2010	Univ. Arizona, 17043 Certificate	UofAZAquaculturePTCertScopeV004.pdf

19. 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

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

No

TOR9: SCIENTIFIC MEETINGS

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

No

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

No

TOR10: NETWORK WITH WOA REFERENCE LABORATORIES

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

No

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

No

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

No

26. Did your laboratory collaborate with other WOA 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 WOA Reference Laboratories for the same pathogen?

No

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
• Served in the Committee of Aquatic Animal Health Standards Commission (AAHSC) for aquatic animal diagnostic kits evaluation for OIE Registration.	Virtual meeting	Registration of disease diagnostic kit for shrimp.

29. Additional comments regarding your report:

No