

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 25 avril 2023 13:04

Laboratory Information

Name of disease (or topic) for which you are a designated WOAHO Reference Laboratory:	Acute hepatopancreatic necrosis disease
Address of laboratory:	No.500, Sec. 3, Anming Rd., Annan Dist., Tainan City 709, Taiwan
Tel.:	+886-6-384-2448
E-mail address:	wanghc@mail.ncku.edu.tw
Website:	https://sites.google.com/gs.ncku.edu.tw/icdsa-zh/%E9%A6%96%E9%A0%81
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Han-Ching Wang
Name (including Title and Position) of WOAHO Reference Expert:	Dr. Han-Ching Wang
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 WOAHO Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
IQ2000 (PCR)	Yes	987	52
Real-time PCR	No	20	
Direct diagnostic tests		Nationally	Internationally

TOR2: REFERENCE MATERIAL

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

No

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

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAHP 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 WOAHP 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 WOAHP Standards for the designated pathogen or disease?

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

Yes

NAME OF THE WOAHP MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
ISRAEL	AHPND-related scientific issues	Remote/in loco

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

Title of the study	Duration	PURPOSE OF THE STUDY	PARTNERS (INSTITUTIONS)	WOAHP MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY
AHPND/shrimp interaction	3 years	To find the AHPND toxin targeting mechanisms	Chulalongkorn University, Thailand	THAILAND

Developing diagnostic tools	First year	Developing diagnostic tools for AHPND to support global shrimp aquaculture	Arizona University.	UNITED STATES OF AMERICA
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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:

We collected and analyzed AHPND-related samples

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:

We published our epidemiological findings for AHPND as scientific papers.

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:

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1. Chen YL, Kumar R, Liu CH, Wang HC* (2022) *Litopenaeus vannamei* peritrophin interacts with WSSV and AHPND-causing *V. parahaemolyticus* to regulate disease pathogenesis. *Fish Shellfish Immunol.* 126: 271-282. Ranking: 0.041 (VETERINARY SCIENCES, 6/144), IF: 4.622.

2. Lin SJ, Huang JY, Le PT, Lee CT, Chang CC, Yang YY, Su Y, Lo CF, Wang HC. (2022). Expression of the AHPND Toxins PirAvp and PirBvp Is Regulated by Components of the *Vibrio parahaemolyticus* Quorum Sensing (QS) System. *Int. J. Mol. Sci.* 2022, 23, 2889. <https://doi.org/10.3390/ijms23052889>. Ranking: 0.22 (BIOCHEMISTRY & MOLECULAR BIOLOGY, 67/295). IF=5.924.

b) International conferences:

8

1. Wang HC*. (2022). "Modulating Shrimp Gut Health to Explore the Microbiota Resilience in Response to the Shift Between Health and Disease" 4th Congress of the International Society of Fish & Shellfish Immunology" Bodø, Norway. December 12-15. 2022. (Oral presentation)

2. Wang HC*. (2022). "A collection of wisdom: an imperative for facilitating shrimp aquaculture to grow successfully and sustainably" 49th Philippine Society of Biochemistry and Molecular Biology Convention" Online. Nov. 25, 2022. (Oral presentation) (Plenary speaker)

3. Wang HC* (2022). "Promoting effective shrimp aquaculture by comprehensive and collaborative approach" 16th International Symposium on Biocatalysis and Agricultural Biotechnology November 9-11, 2022. (Oral presentation) (Invited Speaker)

4. Lo CF* (2022). Aquaculture and the Challenges of Sustainability. "13th Asian Fisheries and Aquaculture Forum (13AFAF) " Tainan, Taiwan. May 31~June 2. 2022. (Keynote Speaker)

5. Wang HC* (2022) A comprehensive and collaborative approach is critical to promote successful shrimp aquaculture. "The 2nd International Conference on Sustainable Aquaculture: Health and Disease Management (Aqua-Thailand)" March 17-18, 2022. (Keynote Speaker)
6. Chen CY, Wang HC* (2022). Promote global competence in the young generation to ensure their ability to participate on the global stage and shape the future of aquaculture. "The 4th International Symposium on Aquaculture and Fisheries Education" Pingtung, Taiwan. October 7, 2022. (Oral presentation) (Invited Speaker)
7. Kumar R, Chen YL, Liu CH, Wang HC*. (2022). Peritrophin is critical in pathogenesis of acute hepatopancreatic necrosis disease and white spot syndrome in *Litopenaeus vannamei*. "13th Asian Fisheries and Aquaculture Forum", Tainan, Taiwan. May 31-June 2, 2022. (Poster presentation)
8. Kumar R, Chen YL, Liu CH, Wang HC*. (2022). Peritrophin is critical in pathogenesis of acute hepatopancreatic necrosis disease and white spot syndrome in *Litopenaeus vannamei*. "13th Asian Fisheries and Aquaculture Forum", Tainan, Taiwan. May 31-June 2, 2022. (Poster presentation)

c) National conferences:

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

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1. International Center for the Scientific Development of Shrimp Aquaculture
<https://sites.google.com/view/icdsa/>

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 : 1

b) Seminars :

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
A	Israel	1

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	pdf	2020-2023 ISO17025 認證證書 (英文).pdf

19. Is your quality management system accredited?

Yes

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Test for which your laboratory is accredited	Accreditation body
AHPND PCR detection	Taiwan Accreditation Foundation

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

Yes

Our system follows the regulations of ISO17025:2017

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?

Yes

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?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOA Member Countries
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PCR for AHPND detection

Organiser

1

Asia and Pacific

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
OIE expert	remote	OIE Aquatic Manual progress update / Request for assistance for the chapter on infection with acute hepatopancreatic necrosis disease (AHPND)

29. Additional comments regarding your report:

No