

WOAH Reference Laboratory Reports Activities 2024

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LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOAH 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 24 48
*E-mail address:	wanghc@mail.ncku.edu.tw
Website:	
*Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Han-Ching Wang
*Name (including Title and Position) of WOAH 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 WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
IQ2000 (PCR)	No	387	16
Real-time PCR	No	78	0
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
AUSTRIA	Disease diagnosis, pathogen characterization and disease surveillance planning	Remote/In loco
NEW CALEDONIA	Commercial real time PCR kit for AHPND diagnosis.	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
Developing diagnostic		Developing diagnostic tools for AHPND to		UNITED STATES OF

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tests	third year	support global shrimp aquaculture	Arizona University	AMERICA
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13. In exercising your activities, have you identified any regulatory research needs* relevant for WOA?H?

No

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:

5

1. Hsu TK, Shih HY, Huang HJ, Hsu CK, Wang HC, Chen YY, Chen LL* (2024) Isolation and characterization of the novel phage BP14 for lysing *Vibrio parahaemolyticus* and reducing virulence proteins. *Aquaculture* 581: 740484.
2. Chang YT, Huang WT, Wu PL, Kumar R, Wang HC, Lu HP*. (2024) Low salinity stress increases the risk of *Vibrio parahaemolyticus* infection and gut microbiota dysbiosis in Pacific white shrimp. *BMC Microbiology*. 24:275.
3. Wang HC*, Lu HP*. (2024) Introduction to the Special Issue: Microbiome and its impact on immunity in fish and shrimp. *Fish Shellfish Immunol*. 148: 109501.
4. Lin SJ, Le PT, Chang YC, Liu CY, Chen YH, Wu CJ, Huang HJ, Hsu KC, Ko TP, Tien NY, Wang HC, Lo CF, Wang HC*. (2024) The QS regulator AphBvp promotes expression of the AHPND PirAvp and PirBvp toxins and may enhance virulence under acidic conditions. *Int. J. Biol. Macromol* 283: 137563.
5. Kumar R, Castillo-Corea BRJ, Lin SS, Huang CK, Wang HC*. (2024) ARRDC3, a novel α -arrestin, modulates WSSV replication and AHPND pathogenesis in *Litopenaeus vannamei*. *Fish Shellfish Immunol*. in press.

b) International conferences:

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1. Kumar R, Castillo-Corea BRJ, Wang HC* (2024) "The α -arrestin ARRDC3 regulates WSSV and AHPND pathogenesis in *Litopenaeus*

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vannamei" The crustacean society summer meeting 2024" Taipei, Taiwan. May 27-June 1, 2024. (Oral presentation)

c) National conferences:

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1. Kumar R, Wang HC* (2024). Diving Deeper: Improving Aquatic Animal Disease Diagnosis. "Applications of Multi-omics and Gene Editing in Diversified Health, 2024" National Chung Hsing University, Taichung, Taiwan. Jul. 11, 2024 (Invited Speaker).

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

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 Members?

Yes

a) Technical visit : 0

b) Seminars : 0

c) Hands-on training courses: 5

d) Internships (>1 month) 1

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	PHILIPPINES	3
C	THAILAND	2
D	BELGIUM	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/IEC 17025:2017; CNS 17085:2018	PDF	2023-2026 ISO17025 -1認證證書 (英文).pdf

19. Is your quality management system accredited?

Yes

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 WOAHP?

No

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

No

TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

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

Yes

24. Do you network (collaborate or share information) with other WOAHP Reference Laboratories designated for the same pathogen?

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOAHP Reference Laboratories designated for the same pathogen during the past 2 years?

No

We plan to carry it out within the next two years.

26. Did your laboratory collaborate with other WOAHP 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 WOAHP Reference Laboratories for the same pathogen during the past 2 years?

No

We plan to carry it out within the next two years.

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No