

# WOAH Reference Laboratory Reports Activities 2023

## Activities in 2023

This report has been submitted : 30 avril 2024 08:45

### Laboratory Information

<b>Name of disease (or topic) for which you are a designated WOAHO Reference Laboratory:</b>	Newcastle disease
<b>Address of laboratory:</b>	No.369 Nanjing Road, Qingdao, P.R. China
<b>Tel.:</b>	+86-532 85.63.91.66
<b>E-mail address:</b>	zlwang111@163.com
<b>Website:</b>	
<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	Zhiliang Wang, Prof., PhD, DVM
<b>Name (including Title and Position) of WOAHO Reference Expert:</b>	Zhiliang Wang, Prof., PhD, DVM, Deputy Director General of China Animal Health and Epidemiology Center
<b>Which of the following defines your laboratory? Check all that apply:</b>	Governmental

### 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	
		Nationally	Internationally
<b>Indirect diagnostic tests</b>			
HI		460	0
<b>Direct diagnostic tests</b>			
Virus isolation		16104	0
RT-PCR		13755	0
ICPI		17	0
Real-time RT-PCR		345	0
NDV genetic analysis by sequencing		509	0

### TOR2: REFERENCE MATERIAL

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

No

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

Yes

TYPE OF REAGENT AVAILABLE	RELATED DIAGNOSTIC TEST	PRODUCED/ PROVIDE	AMOUNT SUPPLIED NATIONALLY (ML, MG)	AMOUNT SUPPLIED INTERNATIONALLY (ML, MG)	NO. OF RECIPIENT WOAHO MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
Inactivated NDV	Real-time RT-PCR	Provide	10 mL	0	1	CHINA (PEOPLE'S REP. OF),

NDV antiserum	HI	Provide	15 mL	0	1	CHINA (PEOPLE'S REP. OF),
---------------	----	---------	-------	---	---	---------------------------

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAHA Members?

No

### TOR3: NEW PROCEDURES

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

Yes

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

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
Digital RT-PCR for genotype VII NDV	Detection and quantitation of genotype VII NDV ( <a href="https://zgdwjy.cahec.cn/zgdwjy/article/abstract/202305017">https://zgdwjy.cahec.cn/zgdwjy/article/abstract/202305017</a> )
Real-time RT-PCR for virulent NDV	Validation of real-time RT-PCR method using NDVs isolated in 2023 (unpublished)

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

Yes

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

Yes

NAME OF THE NEW VACCINE DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
Genotype-matched vaccine for pigeon NDV (Genotype VI)	Genotype-matched vaccine for sub-genotype VI using reverse genetics (National invention patent: ZL 202111172150.7)
Live vector vaccine for H9 AIV (NDV vector)	Live vector vaccine for H9 AIV and genotype VII NDV using reverse genetics (unpublished)

### TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

Yes

NAME OF THE WOAHA MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
VIETNAM	Consultation on real-time RT-PCR for detecting virulent NDVs	Email

### TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

No

13. In exercising your activities, have you identified any regulatory research needs\* relevant for WOAHA?

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:

Global distribution and genetic characterization of Newcastle disease viruses (WAHIS, EMPRES-i, Published research paper, international meetings)

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:

Global distribution and genetic characterization of Newcastle disease viruses (WAHIS, MARA website, CAHEC website, Published research paper, international/national meetings, Wechat app)

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:

3

- [1] *Shu B, Wang J, Yu X, et al. The genetic and biological characterization of the first avian paramyxovirus serotype 14 isolated from chicken in China. Virus genes, 59 (4): 554-561.*
- [2] *Peng Z, Yu X, Xing A, et al. Discussion on the genomic characteristics of 8 strains of pigeon Newcastle disease viruses isolated in China from 2021 to 2022. China animal health inspection, 2023, 40 (2): 1-8.*
- [3] *Wang J, Ke J, Yu X, et al. Establishment and application of RT-dPCR for gene VII.2 subtype Newcastle disease virus. China animal health inspection, 2023, 40 (5): 82-87.*

b) International conferences:

2

- [1] *2nd Online (Zoom) Meeting for the WOAHA avian disease network in East Asia. Webinar, June 8, 2023.*
- [2] *Regional Workshop for Avian Disease prevention and control in Asia and the Pacific. Qingdao, August 29-31, 2023.*

c) National conferences:

5

- [1] *The 8th Symposium on Avian Disease. Taian, April 15-16, 2023.*
- [2] *The 9th Veterinary Medicine Conference. Qingdao, June 18-19, 2023.*
- [3] *National Epidemiological Investigation Meeting. Hefei, April 20-21, 2023.*
- [4] *National Training on Prevention and Control of Avian Disease. Nanning, August 2, 2023.*
- [5] *The Epidemic Analysis Meeting for Major Avian Disease. Mangshi, September 26-27, 2023.*

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

## TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit : 0

b) Seminars : 31

c) Hands-on training courses: 0

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
B	KOREA (REP. OF)	31

## 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	jpg	17025.jpg

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Virus isolation	China National Accreditation Service for Conformity Assessment (ilac-MRA, APLAC-MRA)
RT-PCR	China National Accreditation Service for Conformity Assessment (ilac-MRA, APLAC-MRA)
Real-time RT-PCR	China National Accreditation Service for Conformity Assessment (ilac-MRA, APLAC-MRA)

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

Yes

The experiments related to virulent NDVs are carried out in ABSL-3 laboratory (CNAS BL0008,CNAS-CL 05:2009)

## TOR9: SCIENTIFIC MEETINGS

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

Yes

NATIONAL/ INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
National	National Training on Prevention and Control of Avian Disease	None	2023-08-02	Nanning	60
National	The Epidemic Analysis Meeting for Major Avian Disease	None	2023-09-26	Mangshi	45
International	Regional Workshop for Avian Disease prevention and control in Asia and the Pacific	WOAH Regional Representation for Asia and the Pacific	2023-08-29	Qingdao	54

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

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
The 8th Symposium on Avian Disease	2023-04-15	Taian	speaker	Current situation, prevention and control of Newcastle disease in China
2nd Online (Zoom) Meeting for the WOAHP avian disease network in East Asia	2023-06-08	Online	Short communication	Epidemiological information of avian diseases in China
The 9th Veterinary Medicine Conference	2023-06-18	Qingdao	speaker	Current situation of pigeon Newcastle disease in China and research on prevention and control technology

## 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?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY	NO. PARTICIPANTS	PARTICIPATING WOAHP REF. LABS
-----------------	-------------------------	------------------	-------------------------------

	(PARTICIPANT, ORGANISER, ETC)		
Regional expert network for avian disease in Asia and the Pacific	Participant	2	WOAH Reference Laboratory for Newcastle Disease

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 <sup>1</sup>	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the Test	WOAH Member Countries
Validation of ND HI test	Participant	5	Micro-hemagglutination inhibition test for Newcastle disease virus	CHINA (PEOPLE'S REP. OF),
Validation of NDV RT-PCR	Participant	5	Detection of nucleic acid of virulent Newcastle disease virus	CHINA (PEOPLE'S REP. OF),
Validation of NDV realtime RT-PCR	Participant	5	Detection of nucleic acid of virulent Newcastle disease virus	CHINA (PEOPLE'S REP. OF),

## TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Attendance at WOA avian disease network meeting	Online	2nd Online (Zoom) Meeting for the WOA avian disease network in East Asia
Attendance at WOA regional workshop	Qingdao	Regional Workshop for Avian Disease prevention and control in Asia and the Pacific

29. Additional comments regarding your report:

Yes