

WOAH Reference Laboratory Reports Activities 2025

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LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Rabies
*Address of laboratory:	No.573,Yujinxiang Street, Jingyue District, Changchun, Jilin, China
*Tel:	+86-431 80887698
*E-mail address:	changchun_tu@outlook.com
Website:	http://cvri.caas.cn/
*Name (including Title) of Head of Laboratory (Responsible Official):	WOAH Reference Laboratory for Rabies
*Name (including Title and Position) of WOA Reference Expert:	Dr. Tu Changchun
*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 WOA Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
Direct diagnostic tests			
Fluorescent antibody test (FAT)	Yes	60	0
Reverse transcription-nest PCR (RT-nPCR)	Yes	136	0
Real time TaqMan RT-PCR (FQ-PCR)	Yes	136	0
G gene Sequencing	Yes	15	0
N gene Sequencing	Yes	13	0
Genome Sequencing	Yes	236	0

TOR2: REFERENCE MATERIAL

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

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOA 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 Member Countries	Country of recipients
FITC-anti rabies virus	Direct fluorescent	Produced and provided	0	1 ml	1	PHILIPPINES,

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conjugate	antibody test					
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4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAHA Members?

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 WOAHA Standards for the designated pathogen or disease?

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
Blocking ELISA	Development and validation of a blocking ELISA for measurement of rabies virus neutralizing antibody. Journal of Clinical Microbiology. 2025, 63(6): e0204924. doi: 10.1128/jcm.02049-24.

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

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

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
PHILIPPINES	Carry out serology test for rabies	During hands-on training courses

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:

Nationally, surveillance data from surveillance programmes (suspect dogs, domestic livestock and wildlife animals) is collected and analysed. From an international perspective, RABV sequences from Asian countries were collected from Genbank and analysed.

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:

National data is reported to the Ministry of Agriculture and Rural Affairs of China.

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:

6

Wang J, Guo J, Li N, Tu Z, Liu S, Ma J, Zhang X, Cheng H, Hao Z, Feng Y, Lv S, Tai G, Zhou Y, Fu J, Tu C, Liu Y. The E3 ubiquitin ligase FBXL18 stabilizes BST2 to promote inflammation in RABV-infected astrocytes. *Nat. Commun.* 2025, 16, 11324. <https://doi.org/10.1038/s41467-025-66427-y>.

Zhang X, Qin G, Lv S, Guo J, Song H, Postings M, Scott P, Wang C, Zhao C, Tu C, Liu Y, Qu X. Exploring RNA G-quadruplex in the rabies virus genome and its potential against RABV infection. *Chem Sci.* 2025, 6. doi: 10.1039/d5sc04344a.

Xiao Y, Wu M, Xu W, Sun S, Liu T, Liu Y, Li H, Feng N, Tu C, Feng Y. Development and validation of a blocking ELISA for measurement of rabies virus neutralizing antibody. *Journal of Clinical Microbiology.* 2025, 63(6): e0204924. doi: 10.1128/jcm.02049-24.

Zhang L, Cruz JL, Tian Y, Wang Y, Jiang J, Gonzales RM, Azul RR, Peña RCD, Sun S, Liu Y, Jiang T, Fang L, Tu C, Gong W, Feng Y. Phylogeography analysis reveals rabies epidemiology, evolution, and transmission in the Philippines. *Molecular Biology and Evolution.* 2025, 42(2): msaf007. doi: 10.1093/molbev/msaf007. doi: 10.1093/molbev/msaf007.

Sun S, Ma J, Xu Y, Zeng Z, Liu J, Hada, Tu Z, Xu W, Feng H, Zhao Z, Tu C, Feng Y. Surveillance and analysis of animal rabies-China, 2004-2024. *China CDC Weekly.* 2025, 7(39): 1235-1240. doi: 10.46234/ccdcw2025.208.

Ren SY, Zhang HT, Feng Y, Li L, Cruz JL, Sun S. Spatial and temporal dynamics of rabies with nonlocal dispersal in a heterogeneous environment: insights for control strategies in the Philippines. *Advances in Continuous and Discrete Models.* 2025: 70. doi: 10.1186/s13662-025-00545-8.

b) International conferences:

0

c) National conferences:

1

Rabies conference in China, 18-19th May, Chongqing, China.

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

0

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: 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
C	PHILIPPINES	2
C	HONG KONG	2

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	Since 31/12/2017 WOA Reference Laboratories should all be accredited to ISO 17025 or equivalent so if anyone	CNAS.jpg

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ticks no, they should have been suspended.

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
FAT,FANV,RT-PCR, RT-qPCR	China National Accreditation Service for Conformity Assessment(CNAS)

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

Yes

The laboratory activities are carries out according to Biosecurity Law of the People's Republic of China (2020)

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

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAHP REF. LABS
WOAHP RABLAB NETWORK/Rabies	participant	19	WOAHP RL for Rabies, Chinese Academy of Agricultural Sciences CHINA Email: changchun_tu@outlook.com

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?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOAHP Ref. Labs/ organising WOAHP Ref Lab
Rabies Serology Proficiency Test	Participant	Unknown	Organizer: ANSES Rabies and Wildlife Laboratory

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?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAHP Member Countries
Rabies Serology Proficiency Test organised by University of Missouri,USA	Participant	4	FAVN	CHINA (PEOPLE'S REP. OF),

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

Because of facing difficulties from policy change and increasing limitations of working condition (mainly insufficient resources of lab space, technicians and experts, fundings etc), it's more and more difficult for us to participate in the international activities, particularly, organize trainings for MSs. In order to overcome the difficulties and gain more resources to expand our RL capacity and capability building, we have established a joint laboratory (Viral Disease Prevention and Control Laboratory, VDPCL) to focus on rabies in cooperation with Institute of Zoonosis/State Key Laboratory for Diagnosis and Treatment of Severe Zoonotic Infectious Diseases, Jilin University, China. Our both sides have a long history of collaborative researches on animal infectious diseases including rabies, and the Institute of Zoonosis was previously designated as WOA?H RC for Food-borne Parasites in the Asia-Pacific Region in 2014. Through this collaboration we successfully organized hands-on training on rabies diagnosis at VDPCL for the Philippines (August) and Hong Kong, China (October) in 2025. Hopefully, WOA?H can accept this kind of collaboration to fulfill our ToR.