

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:	Brucellosis (Brucella abortus, Brucella melitensis, Brucella suis)
*Address of laboratory:	China Institute of Veterinary Drug Control (IVDC), No. 33 Qingfeng Street, Daxing District Beijing, 102600, CHINA (PEOPLE'S REPUBLIC OF CHINA)
*Tel:	+861062103630
*E-mail address:	zhuliangquan2024@126.com
Website:	http://www.ivdc.org.cn/
*Name (including Title) of Head of Laboratory (Responsible Official):	Prof. Huang Weizhong, General Director of IVDC
*Name (including Title and Position) of WOA Reference Expert:	Prof. Liangquan Zhu Designated expert, WOA Reference Laboratory for Brucellosis (Brucella abortus, Brucella melitensis, Brucella suis) at IVDC
*Which of the following defines your laboratory? Check all that apply:	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 WOA Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
RBT	Yes	3640	80
iELISA , cELISA	Yes	2100	80
RT-PCR	Yes	201	0
Direct diagnostic tests			
culture	Yes	201	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
Rose Bengal plate agglutination antigen	RBT	Produced	2480ml	80ml	1	PAKISTAN,
Serum agglutination	SAT	Produced	1045ml	0	0	CHINA (PEOPLE'S REP.

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antigen						OF),
Milk ring test antigen	MRT	Produced	50ml	0	0	CHINA (PEOPLE'S REP. OF),
Brucellosis national positive standard serum	ELISA/FPA/Colloidal Gold Strip/RBPT/SAT/CFT	Produced	177mL	10ml	1	PAKISTAN,

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?

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.)
a Multiplex TaqMan qPCR Assay for Differentiation between Brucella Vaccine Strains and Wild-Type Strains	Development of a Multiplex TaqMan qPCR Assay for Differentiation between Brucella Vaccine Strains and Wild-Type Strains (Microbiology China, under review)

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
PAKISTAN	Training on Brucellosis Diagnostic Techniques	in loco, On-Site Training and workshop
BANGLADESH	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
BHUTAN	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
FUJI	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
INDONESIA	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
LAOS	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
MALAYSIA	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
MONGOLIA	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
MYANMAR	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
NEPAL	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
PAPUA NEW GUINEA	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
PHILIPPINES	Training on Brucellosis Diagnostic	On-Site Training and workshop

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	Techniques	
SRI LANKA	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
THAILAND	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
VANUATU	Training on Brucellosis Diagnostic Techniques	On-Site Training and workshop
IRAN	Brucellosis Diagnostic Techniques	remote

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	WOAH Member Countries involved other than your country
Assessment of Knowledge, Attitudes, and Practices (KAP) Regarding Brucellosis Among Farmers and Farm Managers in Pakistan	2024-2025	Understanding the Knowledge, Attitudes, and Practices (KAP) of Farmers and Farm Managers Regarding Brucellosis in Pakistan to Inform Policy Development	National veterinary laboratory in Pakistan	PAKISTAN

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:

In 2025, the reference laboratory conducted serological testing on a total of 3,640 clinical samples for brucellosis. These samples were collected from six provinces (autonomous regions and municipalities), including Beijing, Hebei, Xinjiang, Sichuan, Guangxi, and Yunnan. Among them, there were 2,196 cattle serum samples, 1,242 sheep serum samples, 100 yak serum samples, 88 dog serum samples, and 14 wolf serum samples.

In addition, in terms of etiological diagnosis (qPCR and culture), a total of 201 samples were tested in 2025. These samples were collected from four provinces (autonomous regions): Xinjiang, Inner Mongolia, Hebei, and Hubei. The samples originated from cattle, sheep, dogs, and cats, and included specimen types such as abortion tissues, vaginal swabs, and blood.

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:

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- Guo C, Zhu X, Zhang Y, et al. Evaluation of the genetic profiles of *Brucella* with different biotypes using MLVA and MLST techniques[J]. *Animal Diseases*, 2025, 5(1): 24.
- SUN Wei-feng, XU Lei, ZHANG Xiao-qian, LI Qiao-ling, ZHANG Ying-hui, ZHANG Yuan, ZHU Xiao-jie, CHENG Jun-sheng, WANG Nan, LI Jun-ping (2025). Analysis of Effectiveness of live Attenuated Vaccines A19 and S2 Strains against Brucellosis under On-farm Conditions. *Chinese Journal of Veterinary Drug*, (10), 1002-1280. (in Chinese)
- Wang Longxi, Dong Chenhui, Yue Huaining, et al. Research Progress on Vaccines for Zoonotic Bacterial Pathogens of Animal Origin [J]. *Microbiology China*, 2025, 52(02): 545-551. (in Chinese)
- Wang Xiaoge, Wang Qi, Tong Rendong, et al. Regulatory Mechanisms and Application Value of Exosomes in *Brucella* Infection [J]. *Microbiology China*, 2025, 52(02): 552-560. (in Chinese)
- Liu Shibo, Tang Xinyue, Zhang Xiaoqian, Zhang Yinghui, Jin Jihui, Sun Weifeng, Peng Xiaowei. Construction and Biological Characteristics of *Brucella* S2Δbp26 Deletion Strain [J]. *Acta Microbiologica Sinica*, 2025, 65(3): 1137-1147. (in Chinese)

b) International conferences:

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1. WOAHO Regional Training Workshop on Brucellosis Diagnosis
2. The 4th International Symposium on Brucellosis

c) National conferences:

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1. Brucellosis Diagnostic Techniques Training Course
2. Brucellosis Zonal Control and Prevention in Xinjiang
3. Brucellosis Zonal Control and Prevention in Shandong
4. Science and Technology Outreach to Rural Areas by the China Animal Disease Control Center
5. China Veterinary Association Zoonotic Disease Prevention and Control Summit Forum

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 WOAHO Members?

Yes

a) Technical visit : 7

b) Seminars : 19

c) Hands-on training courses: 19

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
A	PAKISTAN	7
B	PAKISTAN	5
B	BANGLADESH	1
B	BHUTAN	1
B	FIJI	1
B	INDONESIA	1
B	LAOS	1
B	MALAYSIA	1
B	MONGOLIA	1
B	MYANMAR	1
B	NEPAL	1
B	PAPUA NEW GUINEA	1
B	PHILIPPINES	1
B	SRI LANKA	1
B	THAILAND	1

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B	VANUATU	1
C	BANGLADESH	1
C	BHUTAN	1
C	FIJI	1
C	INDONESIA	1
C	LAOS	1
C	MALAYSIA	1
C	MONGOLIA	1
C	MYANMAR	1
C	NEPAL	1
C	PAPUA NEW GUINEA	1
C	PHILIPPINES	1
C	SRI LANKA	1
C	THAILAND	1
C	VANUATU	1
C	PAKISTAN	5

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	CNAS	ISO17025.jpg
ABSL-3	CNAS	ABSL-3Laboratory.jpg

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Rose Bengal Plate Agglutination Test	China National Accreditation Service for Conformity Assessment
China National Accreditation Service for Conformity Assessment	China National Accreditation Service for Conformity Assessment
Complement Fixation Test	China National Accreditation Service for Conformity Assessment
China National Accreditation Service for Conformity Assessment	China National Accreditation Service for Conformity Assessment
Serum Agglutination Test	China National Accreditation Service for Conformity Assessment
China National Accreditation Service for Conformity Assessment	China National Accreditation Service for Conformity Assessment

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

Yes

Our laboratory has established a comprehensive Biorisk Management System (BRMS) in accordance with both international (WOAH Terrestrial Manual Chapter 1.1.4) and national biosafety standards. The system encompasses: 1. Risk assessment procedures for all pathogens handled, including *Brucella* spp., documented in our "Brucellosis Risk Assessment Report (FXPG01-SWAQ-2019D)." 2. Risk mitigation measures, including engineering controls (BSL-3 and ABSL-3 laboratories), administrative controls, and the use of appropriate personal protective equipment (PPE). 3. A set of documented biosafety manuals and SOPs, such as the "Safety Manual (AQSC-SWAQ-2019D)", which provide guidance on safe laboratory practices, waste management, disinfection procedures, and emergency response. 4. Regular personnel training, drills, and biosafety audits to ensure ongoing compliance and competency. 5. A monitoring and review process, including internal audits, incident reporting systems, and periodic updates of risk assessments and procedures. This integrated system ensures that all laboratory activities involving pathogenic agents, including *Brucella*, are conducted under strict biological risk control, minimizing potential risks to personnel, the environment, and the public.

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	location	No. Participants
International	WOAH Regional Training Workshop on Brucellosis Diagnosis	Regional Representation for Asia and the Pacific	2025-08-04	Beijing	100

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?

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?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOAHP Ref. Labs/ organising WOAHP Ref Lab
validate the first international standard anti-Brucella melitensis camelid serum	Participant	/	the WOAHP Reference Laboratory in the United Arab Emirates

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
Proficiency testing was conducted to evaluate the compliance of laboratories from provincial and municipal animal disease control centers, veterinary biological product manufacturers, and third-party testing institutions in terms of personnel competency, diagnostic reagents and methods, and environmental conditions.	Organizer	61	Rose Bengal Plate Agglutination Test	CHINA (PEOPLE'S REP. OF),

Proficiency testing was conducted to evaluate the compliance of laboratories from provincial and municipal animal disease control centers, veterinary biological product manufacturers, and third-party testing institutions in terms of personnel competency, diagnostic reagents and methods, and environmental conditions.

Organizer

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Rose Bengal Plate
Agglutination Test

CHINA (PEOPLE'S REP. OF),

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

1. Due to difficulties in serum customs clearance, it has posed challenges for us in organizing/participating in international interlaboratory proficiency testing. Could WOAHP possibly provide assistance?

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2. Our institute is not involved in vaccine manufacturing; however, we perform annual randomized sampling and quality evaluation of Brucella vaccines distributed in the Chinese market, following the methodologies recommended by WOA.