

WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 30 mai 2024 03:13

Laboratory Information

Name of disease (or topic) for which you are a designated WOAHO Reference Laboratory:	Bovine babesiosis
Address of laboratory:	Obihiro University of Agriculture and Veterinary Medicine Nishi 2-13, Inada-cho Obihiro, Hokkaido 080-8555
Tel.:	+81-155 49.56.49
E-mail address:	yokoyama@obihiro.ac.jp
Website:	https://www.obihiro.ac.jp/facility/protozoa/en/woah-reference-centres
Name (including Title) of Head of Laboratory (Responsible Official):	Prof. Naoaki Yokoyama
Name (including Title and Position) of WOAHO Reference Expert:	Prof. Naoaki Yokoyama
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	
		Nationally	Internationally
Indirect diagnostic tests			
ELISA IFAT		0	0
Direct diagnostic tests			
Microscopy		29	315
Babesia bovis PCR		0	694
Babesia bigemina PCR		0	694
Babesia naoakii PCR		0	694
Babesia ovata PCR		1177	0
in vitro cultivation		0	60

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 WOA MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
Babesia bovis DNA	PCR	Produced and provided	0.05 MG	0.02 MG	4	MONGOLIA, PARAGUAY, SRI LANKA,
Babesia bigemina DNA	PCR	Produced and provided	0.05 MG	0.02 MG	4	MONGOLIA, PARAGUAY, SRI LANKA,
Babesia naoakii DNA	PCR	Produced and provided	0	0.03 MG	5	ARGENTINA, MONGOLIA, PARAGUAY, SRI LANKA,
Babesia divergens IFAT slides	IFAT	Produced and provided	0	15 slides	1	AUSTRIA,

4. Did your laboratory produce vaccines?

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

NAME OF WOA MEMBER COUNTRY SEEKING ASSISTANCE	DATE	WHICH DIAGNOSTIC TEST USED	NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT	NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES
KYRGYZSTAN	2023-02-06	PCR	319	0
JAPAN	2023-02-28	PCR	30	0
JAPAN	2023-02-28	Microscopy	0	20
JAPAN	2023-03-14	PCR	361	0
SRI LANKA	2023-03-28	In vitro culture	0	10
JAPAN	2023-04-28	PCR	511	0
JAPAN	2023-05-05	PCR	50	0
MONGOLIA	2023-06-03	In vitro culture	0	50
JAPAN	2023-06-06	PCR	100	0
MONGOLIA	2023-06-14	Microscopy	0	315
JAPAN	2023-06-26	PCR	54	0
JAPAN	2023-07-24	PCR	49	0
JAPAN	2023-07-31	PCR	40	0
MONGOLIA	2023-08-09	PCR	375	0
JAPAN	2023-08-31	PCR	100	0
JAPAN	2023-11-06	PCR	197	0
JAPAN	2023-11-07	PCR	40	0
JAPAN	2023-11-13	PCR	36	0
JAPAN	2023-11-29	PCR	49	0

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

Yes

NAME OF THE WOA MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
MONGOLIA	Identification of tick vectors transmitting bovine Babesia species	In person
KYRGYZSTAN	Diagnosis of clinical bovine babesiosis	In person and Electronic consultation
PARAGUAY	Risk factors associated with bovine babesiosis	In person and Electronic consultation
SRI LANKA	Isolation and in vitro cultivation of bovine Babesia species	In person and Electronic consultation
JAPAN	Diagnosis, surveillance, and control of bovine babesiosis	In person and Electronic consultation
CHINA (PEOPLE'S REP. OF)	Management of bovine babesiosis in endemic countries	In person
UGANDA	Management of bovine babesiosis in endemic countries	In person

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOA 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
Epidemiological survey of bovine babesiosis	4 years	To determine the current status of bovine babesiosis in Kyrgyzstan	Kyrgyz Research Institute of veterinary named after A Duisheev	KYRGYZSTAN
Epidemiological survey of bovine babesiosis	3 years	To identify the Babesia species infecting cattle in Paraguay	Vice Ministerio de Ganaderia	PARAGUAY
Non-Rhipicephalus ticks as vectors of bovine Babesia species	3 years	To investigate the tick species other than those belong to Rhipicephalus as potential vectors transmitting Babesia species to cattle	Institute of Veterinary Medicine, Mongolian University of L	MONGOLIA
Prevalence, causative agents, and presentation of clinical babesiosis in cattle in Sri Lanka	4 years	To determine the prevalence, causative Babesia species, and characteristics of clinical bovine babesiosis in Sri Lanka	Veterinary Research Institute	SRI LANKA
Survey of Babesia species in cattle in Nepal	2 years	To identify the Babesia species infecting cattle in Nepal	Institute of Science and Technology, Tribhuvan University	NEPAL

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

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 surveyed cattle in Kyrgyzstan and Nepal, and yaks in Mongolia for bovine Babesia species.

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:

The data from our epidemiological surveys were published in peer-reviewed international scientific journals (see the list of publication in 16a).

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. Dhakal M, Gombo TR, Devkota P, Kafle SC, Subedi JR, Gong H, Arima H, Culleton R, Asada M, Pandey K. *Molecular Detection and Identification of Piroplasm in Cattle from Kathmandu Valley, Nepal. Pathogens.* 2023 Aug 15;12(8):1045.
2. Otgonsuren D, Myagmarsuren P, Zoljargal M, Ahedor B, Sivakumar T, Battur B, Battsetseg B, Yokoyama N. *THE FIRST SURVEY OF BOVINE BABESIA SPECIES INFECTING YAKS (BOS GRUNNIENS) IN MONGOLIA. J Parasitol.* 2023 Oct 1;109(5):480-485.
3. Zhyldyz A, Aitakin K, Atabek B, Elmurat J, Rysbek N, Jailobek O, Ahedor B, Otgonsuren D, Mumbi NNM, Guswanto A, Sivakumar T, Yokoyama N. *An epidemiological survey of vector-borne pathogens infecting cattle in Kyrgyzstan. Parasitol Int.* 2023 Dec;97:102791.

b) International conferences:

0

c) National conferences:

0

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

1

<https://www.obihiro.ac.jp/facility/protozoa/en/woah-reference-centres>

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 : 511

c) Hands-on training courses: 7

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	KYRGYZSTAN	1
B	KYRGYZSTAN	8
B	SRI LANKA	10
B	JAPAN	358
B	PARAGUAY	13
B	MONGOLIA	2
B	CHINA (PEOPLE'S REP. OF)	80
B	UGANDA	40
C	MONGOLIA	7

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	PDF	ISO.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
PCR for Babesia bovis	Perry Johnson laboratory Accrediation, Inc. (PJLA)
PCR for Babesia bigemina	Perry Johnson laboratory Accrediation, Inc. (PJLA)

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

Yes

In accordance with the applicable laws, our university has regulations to ensure the safety when conducting experiments with pathogens, animals, and gene editing. The expert committees regularly review and update these regulations. The expert committees on biorisk management review and approve research plans involving animals, pathogens, and gene manipulation only after a thorough review. All laboratories are routinely examined to ensure that all experiments are carried out safely. All laboratories and animal facilities, including the RL for bovine babesiosis, are run at the BSL2 standard.

TOR9: SCIENTIFIC MEETINGS

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

No

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

No

TOR10: NETWORK WITH WOA?H REFERENCE LABORATORIES

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

Yes

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

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOA?H Reference Laboratories designated for the same pathogen?

No

26. Did your laboratory collaborate with other WOA?H 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?H Reference Laboratories for the same pathogen?

No

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

We have prepared panels of standard test samples, including DNAs and thin blood smears. These will be used for inter-laboratory proficiency testing in 2024.