World Organisation for Animal Health

Naoaki Yokoyama - - JAPAN

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:**	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
***Name (including Title) of Head of Laboratory (Responsible Official):**	Dr. Naoaki Yokoyama
***Name (including Title and Position) of WOAH Reference Expert:**	Dr. 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 WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
Direct diagnostic tests		Nationally	Internationally

Microscopy	Yes	262	206
Babesia bovis PCR	Yes	0	532
Babesia bigemina PCR	Yes	0	532
Babesia naoakii PCR	No	0	532
Babesia ovata PCR	No	612	0
In vitro cultivation	Yes	0	52

TOR2: REFERENCE MATERIAL

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

No

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

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOAH Member Countries	Country of recipients
Babesia bovis DNA	PCR	Produced and provided	0.5 MG	0.01 MG	2	JAPAN, SRI LANKA,
Babesia bigemina DNA	PCR	Produced and provided	0.5 MG	0.01 MG	2	JAPAN, SRI LANKA,
Babesia naoakii DNA	PCR	Produced and provided	0	0.01 MG	1	JAPAN,

4. Did your laboratory produce vaccines?

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

Name of WOAH 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
JAPAN	2024-02-28	PCR	349	0
SRI LANKA	2024-03-30	PCR	206	0
SRI LANKA	2024-03-30	Microscopy	0	206
SRI LANKA	2024-03-30	In vitro culture	0	22
JAPAN	2024-04-26	PCR	347	0
JAPAN	2024-05-17	PCR	50	0
JAPAN	2024-05-17	Microscopy	0	50
JAPAN	2024-05-22	PCR	40	0
JAPAN	2024-05-22	Microscopy	0	40
PARAGUAY	2024-06-10	PCR	326	0
JAPAN	2024-07-05	PCR	50	0
JAPAN	2024-07-05	Microscopy	0	50
JAPAN	2024-07-30	PCR	40	0
JAPAN	2024-07-30	Microscopy	0	40
MONGOLIA	2024-09-30	In vitro culture	0	30
JAPAN	2024-11-05	PCR	38	0
JAPAN	2024-11-05	Microscopy	0	38
JAPAN	2024-11-11	PCR	43	0
JAPAN	2024-11-11	Microscopy	0	43

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

Yes

Name of the WOAH Member Country receiving a technical consultancy	Purpose	How the advice was provided
CHINA (PEOPLE'S REP. OF)	Management of clinical bovine babesiosis	In person
SRI LANKA	Isolation and in vitro cultivation of bovine Babesia species	In person and electronic consultation
MONGOLIA	Isolation and in vitro cultivation of bovine Babesia species	In person and electronic consultation
JAPAN	Surveillance and management of bovine babesiosis	In person and electronic consultation

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

				WOAH Member Countries

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Title of the study	Duration	Purpose of the study	Partners (Institutions)	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 Life Sciences	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

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

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 Paraguay and Sri Lanka 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. Rojas CES, Sivakumar T, Mumbi NNM, Ahedor B, Valinotti MFR, Acosta TJ, Yokoyama N. 2025. Molecular epidemiological survey of Babesia species infecting cattle in Paraguay. Vet Parasitol Reg Stud Reports. 57, 101162.
2. Amarasiri ID, Nizanantha K, Mumbi NNM, Kothalawala IS, Madusanka S, Perera WPPSI, Kothalawala H, Sivakumar T, Yokoyama N. 2024. Development of a specific PCR assay for Theileria sp. Yokoyama and assessment of its potential to cause anemia in cattle. Pathogens. 13, 735.
3. Ma Y, Jian Y, Wang G, Li X, Wang G, Hu Y, Yokoyama N, Ma L, Xuan X. 2024. Molecular Identification of Babesia and Theileria Infections in Livestock in the Qinghai-Tibetan Plateau Area, China. Animals (Basel). 14, 476.

b) International conferences:

1
Amarasiri I, Kalaichelvan N, Ngigi NMM, Kothalawala IS, Kalubowila S, Kothalawala H, Sivakumar T, Yokoyama N. Clinical significance of Theileria sp. Yokoyama infection in cattle examined in Polonnaruwa and Kurunagela districts, Sri Lanka. 76th Annual Scientific Sessions of Sri Lanka Veterinary Association, 2nd August 2024, Kandy, Sri Lanka

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 WOAH Members?

Yes

a) Technical visit : 2

b) Seminars : 167

c) Hands-on training courses: 4

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	MONGOLIA	1
A	CHINA (PEOPLE'S REP. OF)	1
B	CHINA (PEOPLE'S REP. OF)	70

B	MONGOLIA	1
B	JAPAN	85
C	SRI LANKA	4

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO17025:2017	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 WOAH?

No

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

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
WOAH Regional Workshop on Vector Borne diseases in Asia and the Pacific	2024-09-18	Tokyo, Japan	Speaker	Updates on bovine babesiosis: distribution and diagnosis

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

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

No

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

No

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

No

We plan to organize a proficiency testing program in 2025.

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

No

In 2024, no interested laboratories have contacted us about participating in proficiency testing. We plan to notify several laboratories of the availability of our proficiency testing program in 2025.

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No