

# OIE Reference Laboratory Reports Activities

## *Activities in 2020*

**This report has been submitted : 2021-01-05 06:33:56**

<b>Name of disease (or topic) for which you are a designated OIE Reference Laboratory:</b>	Equine piroplasmosis
<b>Address of laboratory:</b>	Obihiro University of Agriculture and Veterinary Medicine Nishi 2-13, Inada-cho Obihiro, Hokkaido 080-8555 JAPAN
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<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	Prof. Naoaki Yokoyama, DVM, PhD
<b>Name (including Title and Position) of OIE Reference Expert:</b>	Prof. Naoaki Yokoyama, DVM, PhD
<b>Which of the following defines your laboratory? Check all that apply:</b>	Academic

**ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards**

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 OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests		Nationally	Internationally
Theileria equi IFAT	Yes	0	492
Babesia caballi IFAT	Yes	0	492
Theileria equi ELISA	Yes	0	442
Babesia caballi ELISA	Yes	0	442
Theileria equi cELISA	Yes	0	50
Babesia caballi cELISA	Yes	0	50
Direct diagnostic tests		Nationally	Internationally
Theileria equi PCR	Yes	0	11
Babesia caballi PCR	Yes	0	11

**ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards.  
To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.**

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

Yes

NOTE: Currently, there are 22 laboratories that produce Standard Reference Reagents officially recognised by the OIE for 19 diseases/pathogens. Please click the following link to the list of OIE-approved International Standard Sera: <http://www.oie.int/en/our-scientific-expertise/veterinary-products/reference-reagents/>. If the reagent is not listed on this page, it is NOT considered OIE-approved. The next two questions allow you to indicate non-OIE-approved diagnostic reagents.

Disease	Test	Available from			
Type of reagent available	Related diagnostic test	Produced/ Supply imported	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	Name of recipient OIE Member Countries
Theileria equi IFAT slides (Nos. 630)	IFAT	Produced and supplied	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	FRANCE
Theileria equi IFAT slides (Nos. 50)	IFAT	Produced and supplied	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	UNITED KINGDOM
Theileria equi IFAT slides (Nos. 110)	IFAT	Produced and supplied	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	ARGENTINA
Theileria equi IFAT slides (Nos. 200)	IFAT	Produced and supplied	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	CHINA (PEOPLE'S REP. OF)
Babesia caballi IFAT slides (Nos. 630)	IFAT	Produced and supplied	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	FRANCE
Babesia caballi IFAT slides (Nos. 50)	IFAT	Produced and supplied	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	UNITED KINGDOM
Babesia caballi IFAT slides (Nos. 330)	IFAT	Produced and supplied	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	ARGENTINA
Babesia caballi IFAT slides (Nos. 200)	IFAT	Produced and supplied	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	CHINA (PEOPLE'S REP. OF)

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

***ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases***

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

***ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries***

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
UNITED KINGDOM	January, February, September, October, and November	0	19
AUSTRALIA	July and December	0	24
NEW ZEALAND	July, August, and December	0	11
UNITED STATES OF AMERICA	March and May	0	5
CHINA (PEOPLE'S REP. OF)	April	0	2
SOUTH AFRICA	January	442	0

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
ARGENTINA	Interpretation of diagnostic test results	Electronic consultation
NEW ZEALAND	risk analysis for equine piroplasmosis and interpretation of diagnostic test results	Electronic consultation
THE NETHERLANDS	In vitro cultivation of Babesia caballi	Electronic consultation
MEXICO	Molecular diagnosis of equine piroplasmosis	Electronic consultation

***ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations***

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
Epidemiology of Theileria equi and Babesia caballi in donkeys in Sri Lanka	3 years	To investigate the epidemiology and genetic diversity of Theileria equi and Babesia caballi in Sri Lanka	Veterinary Research Institute	SRI LANKA
Molecular epidemiology of Theileria equi and Babesia caballi in Paraguay	2 years	To determine the epidemiology and genetic diversity of Theileria equi and Babesia caballi in horses in Paraguay	Universidad Católica	PARAGUAY
Molecular Survey and genotyping of Theileria equi and Babesia caballi in Horses in Mongolia	3 years	To identify the Theileria equi and Babesia caballi genotypes infecting horses in Mongolia	Institute of Veterinary Medicine, Mongolian University of Life Sciences, Ulaanbaatar	MONGOLIA
Molecular and serological survey and clinical impact of equine piroplasmosis in Nigeria	2 years	To determine the molecular and serological prevalence and clinical impact of Theileria equi and Babesia caballi in Nigeria	Unit for Environmental Sciences and Management, NorthWest University, Potchefstroom	NIGERIA SOUTH AFRICA
Development of antigen detection rapid diagnostics for equine piroplasmosis	3 years	To develop rapid ICTs (immunochromatographic test) for the diagnosis of Theileria equi and Babesia caballi active infections in equines	ICAR-National Research Centre on Equines, Hisar, Haryana	INDIA

**ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases**

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:

We conducted an epidemiological survey of equine piroplasm parasites in horses and donkeys from Nigeria.

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

No

If the answer is no, please provide a brief explanation of the situation:
The data that we had collected, processed, and analyzed were published in international scientific journals.

**13. What method of dissemination of information is most often used by your laboratory?  
(Indicate in the appropriate box the number by category)**

a) Articles published in peer-reviewed journals: 6

Batiha, G. E-S., Beshbishy, A.A., Adeyemi O.S., Nadwa, E., Rashwan, E., Yokoyama, N., and Igarashi, I.: Safety and efficacy of hydroxyurea and eflornithine against most blood parasites Babesia and Theileria. PLoS One, 15: e0228996, 2020.

Beshbishy, A.M., Batiha, G.E., Alkazmi, L., Nadwa, E., Rashwan, E., Abdeen, A., Yokoyama, N., and Igarashi, I.: Therapeutic Effects of Atranorin towards the Proliferation of Babesia and Theileria Parasites. Pathogens, 9: E127, 2020.

Onyiche, T.E., Taioe, M.O., Ogo, N.I., Sivakumar, T., Biu, A.A., Mbaya, A.W., Xuan, X., Yokoyama, N., and Thekisoe, O.: Molecular Evidence of Babesia caballi and Theileria equi in Equines and Ticks in Nigeria: Prevalence and Risk Factors Analysis. Parasitology, 17:1-11, 2020.

Batiha, G.E., Tayebwa, D.S., Beshbishy, A.M., N'Da, D.D., Yokoyama, N., and Igarashi, I.: Inhibitory effects of novel ciprofloxacin derivatives on the growth of four Babesia species and Theileria equi. Parasitol. Res., 119: 3061-3073, 2020.

Batiha, G.E., Beshbishy, A.M., Alkazmi, L.M., Nadwa, E.H., Rashwan, E.K., Yokoyama, N., and Igarashi I.: In vitro and in vivo growth inhibitory activities of cryptolepine hydrate against several Babesia species and Theileria equi. PLoS. Negl. Trop. Dis., 14: e0008489, 2020.

Tuvshintulga, B., Kawaguchi, R., Batmagnai, E., Kothalawala, H., Guanasekara, E., Banzragchgarav, O., Nugraha, A.B., Otgonsuren, D., Silva, S.S.P., Sivakumar, T., and Yokoyama, N.: Effects of ethanol and water extracts from Phyllanthus emblica fruits on the growth of bovine Babesia and equine piroplasma parasites in vitro and Babesia microti in mice. Jpn. J. Vet. Parasitol. 19: 21-29, 2020.

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>

**ToR 7: To provide scientific and technical training for personnel from OIE Member Countries  
To recommend the prescribed and alternative tests or vaccines as OIE Standards**

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

No

**ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned**

15. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO17025	ISO17025_2017ver.pdf

16. Is your quality management system accredited?

Yes

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

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

Yes

*(See Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4)*

**ToR 9: To organise and participate in scientific meetings on behalf of the OIE**

18. Did your laboratory organise scientific meetings on behalf of the OIE?

No

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

No

**ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results**

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

Not applicable (Only OIE Reference Lab. designated for disease)

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

Not applicable (Only OIE Reference Lab. designated for disease)

22. Did your laboratory collaborate with other OIE Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

Not applicable (Only OIE Reference Lab. designated for disease)

***ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results***

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

No

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at:  
<http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing> see point 1.3

***ToR 12: To place expert consultants at the disposal of the OIE***

24. Did your laboratory place expert consultants at the disposal of the OIE?

No

25. Additional comments regarding your report: