

# OIE Reference Laboratory Reports Activities

## *Activities in 2015*

**This report has been submitted : 2016-01-19 10:42:38**

<b>Name of disease (or topic) for which you are a designated OIE Reference Laboratory:</b>	Bovine babesiosis
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<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	Prof. Ikuo Igarashi, DVM, PhD
<b>Name (including Title and Position) of OIE Reference Expert:</b>	Prof. Ikuo Igarashi, 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
ELISA for Babesia bovis	yes		1033
ELISA for Babesia bigemina	yes		1033
Immunochromatographic test for B. bovis	no		1033
Immunochromatographic test for B. bigemina	no		1033
Direct diagnostic tests		Nationally	Internationally
PCR for B.bovis	yes		916
PCR for B. bigemina	yes		916

**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?

No

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?

No

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
SRI LANKA	Efficacy of vaccination	Expert conducted the epidemiological survey using different gene markers.
MONGOLIA	Development of diagnostic methods	Expert gave the advices for development of serological and molecular methods.

***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)
Genetic variations in merozoite surface antigen genes of Babesia bovis	1 year	Molecular epidemiological survey	Fue University
Molecular epidemiology on bovine piroplasmosis	3 years	Molecular epidemiological survey on bovine piroplasmosis	Sri Lankan Veterinary Institute

**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

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

Yes

**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: 8

1. Aboge GO, Cao S, Terkawi MA, Masatani T, Goo Y, AbouLaila M, Nishikawa Y, Igarashi I, Suzuki H, Xuan X. 2015. Molecular characterization of Babesia bovis M17 leucine aminopeptidase and inhibition of Babesia growth by bestatin. J Parasitol. 101(5):536-541.

2. Adjou Moumouni PF, Aboge GO, Terkawi MA, Masatani T, Cao S, Kamyngkird K, Jirapattharasate C, Zhou M, Wang G, Liu M, Vudriko P, Ybanez AP, Inokuma H, Shirafuji-Umemiya R, Suzuki H, Xuan X. 2015. Molecular detection and characterization of Babesia bovis, Babesia bigemina, Theileria species and Anaplasma marginale isolated from cattle in Kenya. Parasit Vectors 8:496.

3. Asada M, Yahata K, Hakimi H, Yokoyama N, Igarashi I, Kaneko O, Suarez CE, Kawazu S. 2015. Transfection of Babesia bovis by double selection with WR99210 and blasticidin-S and its application for functional analysis of thioredoxin peroxidase-1. PLoS One. 10(5):e0125993.

4. Elsify, A., Sivakumar, T., Nayel, M., Salama, A., Elkhtam, A., Rizk, M., Mosaab, O., Sultan, K., Elsayed, S., Igarashi, I., and Yokoyama, N. 2015. An epidemiological survey of bovine Babesia and Theileria parasites in cattle, buffaloes, and sheep in Egypt. Parasitol. Int., 64:79-85.

5. Mossadd E, Asada M, Nakatani D, Inoue N, Yokoyama N, Kaneko O, Kawazu S. 2015. Calcium ions are involved in egress of Babesia bovis merozoites from bovine erythrocytes. J Vet Med Sci. 77(1):53-58.

6. Omar MA, Salama A, Elsify A, Rizk MA, Al-Aboody MS, AbouLiala M, El-Sayed SA, Igarashi I. 2015. Evaluation of in vitro inhibitory effect of enoxacin on Babesia and Theileria parasites. Exp Parasitol. 161:62-67.

7. Rizk MA, El-Sayed SA, Terkawi MA, Youssef MA, El Said el Sel S, Elsayed G, El-Khodery S, El-Ashker M, Elsify A, Omar M, Salama A, Yokoyama N, Igarashi I. 2015. Optimization of a fluorescence-based assay for large-scale drug screening against Babesia and Theileria parasites. PLoS One. 10(4):e0125276.

8. Yokoyama N, Sivakumar T, Tuvshintulga B, Hayashida K, Igarashi I, Inoue N, Long PT, Lan DT. 2015. Genetic variations in merozoite surface antigen genes of Babesia bovis detected in Vietnamese cattle and water buffaloes. Infect Genet Evol. 30:288-295.

b) International conferences: 2

1. Ikuo Igarashi et al. Growth inhibitory effects of clofazimine on Babesia and Theileria. 25th International Conference of the World Association for the Advancement of Veterinary Parasitology, August 16-20, Liverpool, United Kingdom.

2. 1. Ikuo Igarashi. Bovine babesiosis: New diagnostic methods, epidemiological survey and chemotherapy. Bogor Agriculture University, Indonesia, December 14, 2015.

c) National conferences: 8

1. Mohamed Rizk, El-Sayed Shima Abd El-Salam, Naoaki Yokoyama and Ikuo Igarashi. Discovering the potent inhibitors against Babesia and Theileria parasites by repurposing the Open malaria box. The 158th Annual Meeting of Veterinary Science, Towada, Japan, September 7-9, 2015.

2. Bumduuren Tuvshintulga, Sivakumar Thillaiampalam, Naoaki Yokoyama and Ikuo Igarashi. Growth inhibitory effects of clofazimine on Babesia and Theileria parasites. The 84th Annual Meeting of Parasitology, Tokyo, Japan, March 21-22, 2015.

3. Naoaki Yokoyama, Sivakumar Thillaiampalam, Ikuo Igarashi, Noboru Inoue. Genetic variation in merozoite surface antigen genes of Babesia bovis detected in Vietnamese cattle and water buffaloes. The 84th Annual Meeting of Parasitology, Tokyo, Japan, March 21-22, 2015.

4. Sivakumar Thillaiampalam, Naoaki Yokoyama. Genetic diversity of Babesia bovis merozoite surface antigen genes: Implication for strain verification and immune control. The 84th Annual Meeting of Parasitology, Tokyo, Japan, March 21-22, 2015.

5. Naoaki Yokoyama, Takahiro Ishizaki, Sivakumar Thillaiampalam, Ikuo Igarashi. Effect of cold treatment on Babesia bovis-infected erythrocytes: A novel technique to isolate free, viable, invasion-component merozoites. The 56th Annual Meeting for Japanese Society of Tropical Medicine, Osaka, Japan, December 4-6, 2015.

6. Sivakumar Thillaiampalam, Noboru Inoue, Ikuo Igarashi, Naoaki Yokoyama. Type-specific PCR assays for Babesia bovis MSA-1 genotype in Asia: revisiting the genetic diversity in Sri Lanka, Mongolia and Vietnam. The 56th Annual Meeting for Japanese Society of Tropical Medicine, Osaka, Japan, December 4-6, 2015.

7. Ikuo Igarashi, Mohamed Abdo Rizk, Abd El-Salam El-Sayed, Naoaki Yokoyama. Discovery of the potent inhibitors against Babesia and Theileria parasites by repurposing the Open Malaria Box. The 56th Annual Meeting for Japanese Society of Tropical Medicine, Osaka, Japan, December 4-6, 2015.

8. Munkhjargal Tserendorji, Naoaki Yokoyama, Ikuo Igarashi. Molecular and biochemical characterization on methionine aminopeptidases of Babesia bovis as a potent drug target. The 56th Annual Meeting for Japanese Society of Tropical Medicine, Osaka, Japan, December 4-6, 2015.

d) Other:

(Provide website address or link to appropriate information) 0

**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?

Yes

a) Technical visits: 1

b) Seminars: 1

c) Hands-on training courses: 2

d) Internships (>1 month):

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	Sri Lanka	10
b	Indonesia	50
c	Sri Lanka, Thailand	2

**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 certified according to an International Standard?

No

Explain Quality Management System in adoption process or currently in place
Application for ISO17025 is currently in progress.

16. Is your laboratory accredited by an international accreditation body?

No

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 2014, Chapter 1.1.3a*)

**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?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
FAO-APHCA/OIE Regional Workshop on Prevention and Control of Neglected Zoonoses	7/2015	Obihiro, Japan	participant	

***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?

No

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?

No

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?

No

***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: