

# OIE Reference Laboratory Reports Activities

## *Activities in 2019*

**This report has been submitted : 2020-02-14 06:28:20**

<b>Name of disease (or topic) for which you are a designated OIE Reference Laboratory:</b>	Babesiosis
<b>Address of laboratory:</b>	Carretera Cuernavaca Cuautla #8534 Colonia Progreso CB 62550, Jiutepec Morelos MEXICO
<b>Tel.:</b>	+52.55.5905.1000 Ext
<b>Fax:</b>	
<b>E-mail address:</b>	joel.mosqueda@uaq.mx
<b>Website:</b>	
<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	Biol. María del Rosario Quezada Delgado Directora del Centro Nacional de Servicios de Constatación en Salud Animal (CENAPA). Dirección General de Salud Animal. Servicio Nacional de Sanidad, Inocuidad y Calidad Agroalimentaria. SADER. MÉXICO.
<b>Name (including Title and Position) of OIE Reference Expert:</b>	Dr. Juan Joel Mosqueda Gualito Experto Técnico del CENAPA. Académico e Investigador de la Facultad de Ciencias Naturales, Universidad Autónoma de Querétaro MÉXICO
<b>Which of the following defines your laboratory? Check all that apply:</b>	Governmental

**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 spp	Yes	658	0
Indirect Immunofluorescence	Yes	658	0
Direct diagnostic tests		Nationally	Internationally
Blood smear for Babesia bigemina	Si	328	0
Blood smear for Babesia bovis	Sí	328	0
PCR for Babesia bigemina	Sí	259	0
PCR for Babesia bovis	Sí	259	0

**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?

No

***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
Characterization of RON2, a novel gene in Babesia bigemina	3 months	To characterize RON2, a novel gene in Babesia bigemina	UAQ SENASICA INIFAP Washington State University OUAVM	JAPAN

**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 collected bovine serum samples from babesiosis endemic areas

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

Yes

If the answer is yes, please provide details of the data collected:
We published scientific papers on the epizootiological data we collected and participated in national conferences.

**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: 4

1. Dante Barreda, Mario Hidalgo-Ruiz, Ruben Hernandez-Ortiz, Juan Alberto Ramos, Edelmira Galindo-Velasco and Juan Mosqueda. Identification of conserved peptides containing B-cell epitopes of *Babesia bovis* AMA-1 and their potential as diagnostics candidates. *Transboundary and Emerging Diseases*. April 2019. 00:1-9.

2. Thu-Thuy Nguyen, Minh Anh Dang Trinh, Luna Higuchi, Juan Mosqueda, Hassan Hakimi, Masahito Asada, Junya Yamagishi, Rika Umemiya-Shirafuji, Shin-ichiro Kawazu. Morphological and ploidy changes in *Babesia ovata* tick stages induced under in vitro conditions. *Pathogens*. 2019 Jul 17;8(3).

3. Juan Mosqueda, Mario Hidalgo-Ruiz, Diana Alexandra Calvo-Olvera, Diego Josimar Hernandez-Silva, Massaro Wilson Ueti, Miguel Angel Mercado-Uriostegui, Angelina Rodriguez, Juan Alberto Ramos-Aragon, Ruben Hernandez-Ortiz, Shin-ichiro Kawazu and Ikuo Igarashi. RON2, a novel gene in *Babesia bigemina*, contains conserved, immunodominant B-cell epitopes that induce antibodies that block merozoite invasion. *Parasitology* 2019, Aug 27: 1-9.

4. Mohamed AbdoRizk, Shimaa Abd El-Salam El-Sayed, Medhat Nassif, Juan Mosqueda, Xuenan Xuan, Ikuo Igarashi. Assay Methods for in Vitro and in Vivo Anti-Babesia Drug Efficacy Testing: Current Progress, Outlook, and Challenges. *Veterinary Parasitology*. Accepted

b) International conferences: 0

c) National conferences: 2

1. Development and evaluation of a vaccine against bovine babesiosis. National Congress of Veterinary Parasitology. Nuevo Leon, Mexico. August 29th, 2019.

2. The importance of vectors in the transmission of zoonotic diseases and their association with climate change. Forum: Perspectives towards one health: human, animal and environmental. Autonomous University of Queretaro, Queretaro, Mexico. October 29th, 2019.

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?

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)
ISO-9001	informe auditoria SIGE 2019.pdf
ISO-17025	INFORME DE EVALUACION.pdf
ISO-17043	informe vigilancia PEA 2019.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Visita y auditorías para la certificación del Sistema de Gestión de Calidad	Certificación por la empresa SIGE
Visitas y verificación del Sistema de Gestión de Calidad por la Norma ISO-17025	Acreditación por la Entidad Mexicana de Acreditación
Visita y verificación para la Norma ISO-17043	Acreditación por la Entidad Mexicana de Acreditación

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?

Yes

National/ International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	Guidelines for the control of Cattle Ticks in Latin America	UAQ, OIE, SENASICA, CYTED	11/19	Queretaro, Mexico	70
International	Ecology and Identification of Ticks	UAQ, OIE, SENASICA, CYTED	11/19	Queretaro, Mexico	20

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?

Yes

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?

Yes

Title of the project or contract	Scope	Name(s) of relevant OIE Reference Laboratories
Characterization of RON2, a novel gene in Babesia bigemina,	To characterize a novel gene in Babesia bigemina	SENASICA, NRCPD-OUAVM

**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?

Yes

Kind of consultancy	Location	Subject (facultative)
Revision of the Babesiosis Chapter for the OIE manual	Mexico	Juan Mosqueda made teh revision of the Chapter

25. Additional comments regarding your report:

We are in the process to standardize and validate our diagnostics methods according to OIE standars.