WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted: 25 avril 2023 13:27

Laboratory Information

<table>
<thead>
<tr>
<th>Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:</th>
<th>Babesiosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address of laboratory:</td>
<td>Carretera Cuernavaca Cuautla #8534 Colonia Progreso CB 62550, Jiutepec Morelos MEXICO</td>
</tr>
<tr>
<td>Tel.:</td>
<td>+52-777 3.19.02.02</td>
</tr>
<tr>
<td>E-mail address:</td>
<td><a href="mailto:joel.mosqueda@uaq.mx">joel.mosqueda@uaq.mx</a></td>
</tr>
<tr>
<td>Website:</td>
<td><a href="https://www.gob.mx/senasica/acciones-y-programas/centro-nacional-de-servicios-de-constatacion-en-salud-animal-cenapa">https://www.gob.mx/senasica/acciones-y-programas/centro-nacional-de-servicios-de-constatacion-en-salud-animal-cenapa</a></td>
</tr>
<tr>
<td>Name (including Title of Head of Laboratory (Responsible Official)):</td>
<td>Biól. María del Rosario Quezada Delgado</td>
</tr>
<tr>
<td>Name (including Title and Position of WOAH Reference Expert):</td>
<td>MVZ, PhD Juan Joel Mosqueda Gualito</td>
</tr>
<tr>
<td>Which of the following defines your laboratory? Check all that apply:</td>
<td>Governmental</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Diagnostic Test</th>
<th>Indicated in WOAH Manual (Yes/No)</th>
<th>Total number of test performed last year Nationally</th>
<th>Internationally</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect diagnostic tests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect ELISA for Babesia bigemina and B. bovis</td>
<td>yes</td>
<td>174</td>
<td></td>
</tr>
</tbody>
</table>

WOAH Reference Laboratory Reports Activities 2022
Indirect ELISA for Babesia spp  |  no  |  39
Indirect ELISA for Babesia spp  |  no  |  900
Direct diagnostic tests  |  Nationally  |  Internationally
Microscopy of giemsa-stained bloof for Babesia bovis and B. bigemina  |  yes  |  293

**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?
No
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?
Yes
7. Did your laboratory validate diagnostic methods according to WOAH Standards for the designated pathogen or disease?
Yes

<table>
<thead>
<tr>
<th>NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED</th>
<th>DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A new ELISA test for the serological detection of Babesia spp.</td>
<td>An interlaboratory validation of a new ELISA test for the immunological detection of Babesia spp in cattle. Manuscript yet to be submitted.</td>
</tr>
</tbody>
</table>

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**

10. Did your laboratory carry out diagnostic testing for other WOAH Members?
No
11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAH Member?
No
**TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES**

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

Cattle sera analyzed by the two Reference Laboratories available

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:**


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


b) International conferences:

3

1. The Spherical Body Protein 4 from Babesia bigemina is a novel gene, contains conserved B-cell epitopes and induces cross-reactive, neutralizing antibodies in Babesia ovata. Apicowplexa 5-7 October 2022. Bern Switzerland

2. Rhipicephalus microplus VDAC is a vaccine candidate that contains conserved B-cell epitopes, which induce antibodies in immunized...
3. Efficacy evaluation of a multiepitopic recombinant protein as a vaccine against Babesia bigemina. August 21-26, 2022, Copenhagen, Denmark.

c) National conferences:

3
1. Desarrollo de vacunas contra garrapatas y hemoparasitos de los bovinos: desafíos y perspectivas. IV Congreso Nacional e Internacional de proteínas y grasas de origen animal
   Universidad de Colima, 30 de noviembre del 2022
2. DETECCIÓN MOLECULAR DE BABESIA BIGEMINA, BABESIA BOVIS Y ANAPLASMA MARGINALE EN BUFALOS DE AGUA (BUBALUS BUBALIS) EN UN RANCHO DE TABASCO. Congreso de Ciencias Veterinarias y producción Animal. 31 Oct 2022.

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

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH Members?
No

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?
Yes

<table>
<thead>
<tr>
<th>Quality management system adopted</th>
<th>Certificate scan (PDF, JPG, PNG format)</th>
<th>Accreditation body</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 17025</td>
<td>pdf</td>
<td>Entidad Mexicana de Acreditación EMA</td>
</tr>
<tr>
<td></td>
<td>2 - certificado ISO17025 LAB ENSAYOS.pdf</td>
<td></td>
</tr>
</tbody>
</table>

19. Is your quality management system accredited?
Yes

<table>
<thead>
<tr>
<th>Test for which your laboratory is accredited</th>
<th>Accreditation body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificado del Sistema de Calidad</td>
<td>SIGE</td>
</tr>
<tr>
<td>Acreditación de la Norma de Calidad</td>
<td>Entidad Mexicana de Acreditación EMA</td>
</tr>
</tbody>
</table>

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

We follow the Manual of Diagnostics test and Vaccines for terrestrial animals 1.1.4.

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAH?
Juan Joel Mosqueda Gualito - Babesiosis - MEXICO

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

<table>
<thead>
<tr>
<th>Title of event</th>
<th>Date (mm/yy)</th>
<th>Location</th>
<th>Role (speaker, presenting poster, short communications)</th>
<th>Title of the work presented</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICOPA</td>
<td>2022-08-21</td>
<td>Copenhaguen Denmark</td>
<td>Short communication</td>
<td>Efficacy evaluation of a multiepitopic recombinant protein as a vaccine against Babesia bigemina</td>
</tr>
<tr>
<td>Primer Seminario de Actualización en Parasitología de Animales en Producción</td>
<td>2022-11-30</td>
<td>Oaxaca, Mexico</td>
<td>Speaker</td>
<td>Desarrollo de vacunas contra garrapatas y hemoparásitos de los bovinos: desafíos y perspectivas</td>
</tr>
</tbody>
</table>

**TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES**

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

24. Are you a member of a network of 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?
Yes

<table>
<thead>
<tr>
<th>PURPOSE OF THE PROFICIENCY TESTS: 1</th>
<th>ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/PARTICIPANT)</th>
<th>NO. PARTICIPANTS</th>
<th>PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validation of an Indirect ELISA test for the serological detection of anti- Babesia spp antibodies</td>
<td>Organizer</td>
<td>2</td>
<td>National Research Center for Protozoan Diseases (Japan)/ CENAPA-SENASICA (Mexico)</td>
</tr>
</tbody>
</table>

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?
Yes
Identification of vaccine candidates for bovine babesiosis | To identify potential vaccine antigens of Babesia bigemina. | National Research Center for Protozoan Diseases (Japan)/ CENAPA-SENASICA (Mexico)

**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?

No

**TOR12: EXPERT CONSULTANTS**

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

Yes

<table>
<thead>
<tr>
<th>KIND OF CONSULTANCY</th>
<th>Location</th>
<th>SUBJECT (FACULTATIVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review of babesiosis chapter</td>
<td>local</td>
<td>I revised the babesiosis chapter for WOAH</td>
</tr>
</tbody>
</table>

29. Additional comments regarding your report:

Yes

*Despite the limited interlaboratory exchange due to Covid-19 with the Japanese laboratory (the other only Reference laboratory for babesiosis in the world) we were able to work in several collaborative projects.*