

OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-02-22 10:26:03

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Brucellosis (Brucella abortus, B. melitensis)
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Website:	
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Boris Yakobson
Name (including Title and Position) of OIE Reference Expert:	Menachem Banai
Which of the following defines your laboratory? Check all that apply:	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			
Sheep CFT	Yes	418/25544	
Sheep MAT	No	17/507	
Sheep FPA	Yes	1209/14336	
Goat CFT	Yes	114/5900	
Goat MAT	No	10/104	
Goat FPA	Yes	117/2802	
Cattle CFT	Yes	331/36505	
Cattle MAT	No	88/4283	
Direct diagnostic tests			
Human /biotyping	No	B. mel bv. 1 - 127; bv. 2 - 54; rough - 1	
Cattle isolation/biotyping	Yes	B. mel bv. 1 - 7, bv. 2 - 17, S19 - 1	
Sheep isolation/biotyping	Yes	B. mel bv. 1 - 2, bv. 2 - 3; Rev. 1 - 1	
Dogs	No	B. canis - 2	

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?

Yes

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

No

Name of the new test or diagnostic method or vaccine developed	Description and References (Publication, website, etc.)
Serum PCR	Journal name: Microorganisms Manuscript ID: microorganisms-1594371 Type of manuscript: Article Title: Serum PCR diagnosis of Brucella melitensis infection in Rev. 1 vaccinated sheep Authors: Shubham Mathur, Svetlana Bardenstein, Dani Cohen, Menachem Banai * Received: 27 January 2022 Under review

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?

No

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:
Isolation of B. canis from dogs

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:
Although B. canis has recently been reported in several European countries, this disease is not considered by OIE. This subject has been discussed by OIE experts if B. canis should be introduced into the OIE manual. It was collectively agreed that this subject should be included in next editioned.

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: 1
 David Kornspan, Holger Brendebach, Dirk Hofreuter, Shubham Mathur, Shlomo Eduardo Blum, Marcelo Fleker, Svetlana Bardenstein and Sascha Al Dahouk. 2021. Protein Biomarker Identification for the Discrimination of Brucella melitensis Field Isolates From the Brucella melitensis Rev.1 Vaccine Strain by MALDI-TOF MS. Front. Microbiol., 22 <https://doi.org/10.3389/fmicb.2021.712601>

b) International conferences: 0

c) National conferences: 1

Shubham Mathur. Report on progress of Ph.D. dissertation. Kimron Veterinary Institute. Development of an O - Polysaccharide based Brucella vaccine. Beit Dagan, 5025001, Israel. (Zoom, November, 2021)

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 17025	ISO 17025+ ISO 15189.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Serology	Israel Laboratory Accreditation Authority

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?

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?

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?

Yes

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

Purpose for inter-laboratory test comparisons ¹	No. participating laboratories	Region(s) of participating OIE Member Countries
Proficiency	15	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East

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:

Brucellosis due to *B. melitensis* is still endemic in Israel and transmission to dairy cattle despite B19 vaccination is of a major concern. We have developed Serum PCR as a direct method of identification of the etiological agent involved in serological diagnosis of the disease based upon amplification of specific DNA fingerprints of the agent, including vaccine strains Rev. 1 and species resolution between *B. melitensis*, and *B. abortus*. This helped resolve S19 vaccine induced abortion in one calve, identify Rev. 1 induced persistent serology and a human case of a Rev. 1 infection. In addition, we characterized *B. canis* cases in dogs which responded by rapid agglutination in serological tests.

We have submitted the manuscript, which is currently under review. We feel that this methods should be furthered in underdeveloped countries as a major diagnosis of the disease.