

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 2 mai 2023 11:31

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	brucellosis
Address of laboratory:	Kimron Veterinary Institute
Tel.:	972-3-9681682
E-mail address:	menachemba48@gmail.com
Website:	
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Boris Yakobson
Name (including Title and Position) of WOAH Reference Expert:	Dr. Menachem Banai
Which of the following defines your laboratory? Check all that apply:	Governmental

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

Diagnostic Test	Indicated in WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
CFT	yes	Surveillance: Small ruminants - 756/11368; Cattle - 528/27394; Camels - 22/433, Goats - 284/2885, humans - 45/425	

FPA	yes	Surveillance: Small ruminants - 2110/11368; Goats - 584/2885; Camels - 32/433; Goats - 584/2885	
Direct diagnostic tests		Nationally	Internationally
Bacteriological isolation and biotyping	yes	Isolate typing: B. abortus (cattle) - 1 case; B. melitensis bv. 1 sheep - 113 cases; B. melitensis bv. 2 - 61 cases; B. melitensis Rev. 1 vaccine - 1 case; Human isolates 175 cases	

TOR2: REFERENCE MATERIAL

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

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOA?H Members?

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA?H Members?

No

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
Serum PCR	This method provides a molecular DIVA solution to distinguish between Rev. 1 vaccine induced and field case induced antibodies Serum PCR Diagnosis of Brucella melitensis Infection in Rev. 1 Vaccinated Sheep Shubham Mathur; Svetlana Bardenstein; Daniel Cohen; Menachem Banai Microbiol. Res. 2023, Volume 14, Issue 1, 21-33

7. Did your laboratory validate diagnostic methods according to WOA?H Standards for the designated pathogen or disease?

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

Yes

9. Did your laboratory validate vaccines according to WOA?H Standards for the designated pathogen or disease?

Yes

NAME OF THE NEW VACCINE DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
Brucella OPS	A research on developing a novel vaccine based upon B. melitensis OPS. Shubham Mathur Ph.D. Dissertation, Tel Aviv University, Israel

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOA Member?

No

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOA Member?

Yes

NAME OF THE WOA MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
KYRGYZSTAN	Training on Brucella serology	Five days Personal visit of Dr. Svetlana Bardenstein: Regional Training on Laboratory Diagnosis of brucellosis for Central Asia January 2022

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

Title of the study	Duration	PURPOSE OF THE STUDY	PARTNERS (INSTITUTIONS)	WOAH MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY
Confirming B. abortus cases	June 2022	Confirming B. abortus cases in dairy cattle in Israel	Dr. Falk Melzer, Friedrich Loeffler Institute FLI · Institute of Bacterial Infections and Zoonoses (IBIZ)	GERMANY

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:

Genomic Epidemiology of Clinical Brucella melitensis Isolates from Southern Israel.
Zilberman B, Motro Y, Sagi O, Kornspan D, Ben-Shimol S, Gdalevich M, Yagel Y, Davidovitch N, Khalfin B, Rabinowitz P, Neshet L, Grotto I, Bardenstein S, Moran-Gilad J. Microorganisms. 2022 Jan 22;10(2):238. doi: 10.3390/microorganisms10020238

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:

Confirming B. canis positive serological case with Cornell University Health Diagnostic Center

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:

peer review

Natural Brucella melitensis infection and Rev.1 vaccination induce specific antiBrucella O-polysaccharide antibodies involved in the complement mediated

Brucella cell killing.

Mathur Shubham, Daniel Cohen, Bardenstein S, Banai Menachem. Vaccine, 2022 10(2): 317 doi:

10.3390/vaccines10020317

5. Long-Read Sequencing and Hybrid Assembly for Genomic Analysis of Clinical

Brucella melitensis Isolates.

Hillary A. Craddock, Motro Y, Bar Zilberman, Khalfin B, Bardenstein S, Moran-Gilad

J.Microorganisms. 2022 Jan 22;10(2):619. doi: 10.3390/microorganisms10020238

6. The association between natural drinking water sources and the emergence of zoonotic leptospirosis among grazing beef cattle herds during a human outbreak.

Zamir L, Baum M, Bardenstein S, Blum SE, Moran-Gilad J, Perry Markovich M, King R, Lapid R,

Hamad F, Even-Tov B, Elnekave E. One Health. 2022 Jan 29;14:100372. doi:

10.1016/j.onehlt.2022.100372.

b) International conferences:

Dr. Svetlana Bardenstein participated in the conference

Brucellosis International Research Conference (including the 74st

Brucellosis Research Conference) , Italy

c) National conferences:

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 WOA Members?

Yes

a) Technical visit : Regional Training on Laboratory Diagnosis of Brucellosis for Central Asia, Kyrgistan, Bishket, January 2022

b) Seminars : Dr. Bardenstein attended Brucellosis International Research Conference (including the 74st Brucellosis Research Conference) in Italy.

c) Hands-on training courses:

d) Internships (> 1 month)

Type of technical training	Country of origin of the expert(s)	No. participants from the
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provided (a, b, c or d)	provided with training	corresponding country
Serological diagnosis of brucellosis	Kyrgistan, Kazakhstan, Uzbergistan, Tagikistan	10

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO 17025	pdf	ISO 17025+ 15189, 2022-2024.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
CFT, FPA	Israel Laboratory Accreditation Authority
Brucella typing	Israel Laboratory Accreditation Authority

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

Yes

Bisafety Level 3

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOA?

No

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

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
Brucellosis International Research Conference (including the 74st Brucellosis Research Conference)	2022-09-16	Italy	Participant	

TOR10: NETWORK WITH WOA REFERENCE LABORATORIES

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

Yes

24. Are you a member of a network of WOA Reference Laboratories designated for the same pathogen?

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOA Reference Laboratories designated for the same pathogen?

No

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

No

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA Reference Laboratories for the same pathogen?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOA Member Countries
CFT, MAT	Participating	22	Africa Asia and Pacific Europe MiddleEast
Typing Brucella strains by PCR	Participating	14	Africa America Asia and Pacific MiddleEast

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Contribution to the last edition of the WOA manual for terrestrial animals	e-mails	Revising WOA manual for terrestrial animals

29. Additional comments regarding your report:

Yes

Our national activity involved serological testing of thousands of animals, small ruminants and cattle, as well as camels. B. canis emerged as a new pathogen in the country. B. abortus was first isolated in a dairy farm after a long period of being free. This farm has been destructed, and no further events have been notified since. Source of infection was not revealed.