WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 27 mai 2024 13:43

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Brucellosis (Brucella abortus, B. melitensis)
Address of laboratory:	Department of Brucellosis Research, Animal Health Research Institute (AHRI) Agricultural Research Center, Ministry of Agriculture and Land Reclamation 7 Nadi El-Said Street P.O. Box 12618 Dokki Giza EGYPT
Tel.:	+201 222.28.14.76
E-mail address:	merhamdy@ahri.gov.eg & merhamdy@hotmail.com
Website:	www.ahri.gov.eg
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Momtaz A. Shahein (Director): Animal Health Research Institute (AHRI), (ARC) Egypt
Name (including Title and Position) of WOAH Reference Expert:	Dr. Mahmoud Essam Rashad Hamdy, (Chief Researcher) Department of Brucellosis Research, AHRI, Egypt.
Which of the following defines your laboratory? Check all that apply:	Governmental Research Institute. 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
RBT		615	0
BAPAT		615	0
SAT		491	0
CFT		437	0
ELISA		418	0
Direct diagnostic tests		Nationally	Internationally
Culture and Biotyping		121	0
Multiplex PCR		78	8

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?

No

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

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
Application of Multiplex PCR for Detection of B. canis in serum of dogs.	1. Hamdy MER, Abdel-Haleem MH, Dawod RE, Ismail RI, Hazem SS, Fahmy HA, and Abdel-Hamid NH (2023) First seroprevalence and molecular identification report of Brucella canis among dogs in Greater Cairo region and Damietta Governorate of Egypt, Veterinary World, 16(1): 229–238.
Application of ELISA for detection of Brucellla antibodies in camels	6. Soliman S. Hazem, Rania I. Ismail*, Hend I. Elsharkawy and Mohamed K. Al Kholi, Eman M. Younis, Saher A. El-Madawy. Overview on Brucellosis in Camels. Egyptian Journal of Animal Health 3, 3 (2023), 185-199. P-ISSN: 2735-4938 On Line-ISSN: 2735-4946 Journal homepage: https://ejah.journals.ekb.eg/

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?

Yes

NAME OF WOAH MEMBER COUNTRY SEEKING ASSISTANCE	DATE	WHICH DIAGNOSTIC TEST USED	NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT	NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES
ERITREA	2023-08-26	Multiplex PCR	8	8

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

Yes

NAME OF THE WOAH MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
ERITREA	Identification and Bacteriological typing of Brucella organisms and detection by AMOS-PCR	Electronic – web communication
ALGERIA	proper application of serological tests for diagnosis of brucellosis in different animals.	Electronic – web communication
IRAQ	Proper conditions for the application of AMOS PCR in detection of different Brucella species	Electronic – web communication

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH 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
Whole-genome sequencing (WGS) analysis of Brucella suis biovar 2 isolated from domestic	2 years	Identification of WGS of newly isolated B. suis biovar 2 from domestic pigs in Egypt, as it is the first time to isolate such	FLI (WOAH Ref Lab for Brucellosis in Germany	GERMANY

pigs in Egypt for epidemiological and genetic diversity tracing.		Brucella biovar outside European continent.		
Brucellosis in Egypt: Evolution, current situation, epidemiology, assessment of national control measures, and genetic diversity and traceability of prevalent Brucella strains circulating among different animal species	2 years	Brucellosis in Egypt: Evolution, current situation, epidemiology, assessment of national control measures, and genetic diversity and traceability of prevalent Brucella strains circulating among different animal species	WOAH Ref Lab for Brucellosis .French Agency for Food, Environmental & Occupational Health & Safety (ANSES) Animal Health Laboratory - Bacterial Zoonoses Unit 14 rue Pierre et Marie Curie F-94701 Maisons-Alfort Cedex FRANCE	FRANCE
WGS and Practice Risk Analysis of Brucellae in domestic pigs in Egypt.	2 years	WGS and Practice Risk Analysis of Brucellae in domestic pigs in Egypt.	WOAH Ref Lab for Brucellosis .French Agency for Food, Environmental & Occupational Health & Safety (ANSES) Animal Health Laboratory - Bacterial Zoonoses Unit 14 rue Pierre et Marie Curie F-94701 Maisons-Alfort Cedex FRANCE	FRANCE

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

Yes

Research need : 1

Please type the Research need: Standardization of Indirect serological tests for Diagnosis of Brucellosis in camels.

Relevance for WOAH Standard Setting,

Relevance for the Codes or Manual Manual,

Field Epidemiology and Surveillance, Diagnostics, Vaccines, Therapeutics,

Animal Category Terrestrial,

Disease:

Brucellosis (Brucella abortus, Brucella melitensis)

Kind of disease (Zoonosis, Transboundary diseases) Zoonosis, Transboundary diseases,

If any, please specify relevance for Codes or Manual, chapter and title

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

Answer: Camel Diseases

Notes:

Answer:

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:

1- Whole-genome sequencing (WGS) analysis of Brucella suis biovar 2 isolated from domestic pigs in Egypt for epidemiological and genetic diversity .

2- First seroprevalence and molecular identification report of Brucella canis among dogs in Greater Cairo region and Damietta Governorate of Egypt.

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:

Wareth G, Abdel-Hamid NH, Hamdy MER, Elmonir W, Beleta EIM, El-Diasty M, Abdel-Glil MY, Melzer F, Neubauer H. Whole-genome sequencing (WGS) analysis of Brucella suis biovar 2 isolated from domestic pigs in Egypt for epidemiological and genetic diversity tracing. Vet Microbiol. 2023 Feb; 277:109637. doi: 10.1016/j.vetmic.2022.109637. Epub 2022 Dec 23. PMID: 36586209.

Hamdy MER, Abdel-Haleem MH, Dawod RE, Ismail RI, Hazem SS, Fahmy HA, and Abdel-Hamid NH (2023) First seroprevalence and molecular identification report of

Brucella canis among dogs in Greater Cairo region and Damietta Governorate of Egypt, Veterinary World, 16(1): 229–238.

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:

7
Hamdy MER, Abdel-Haleem MH, Dawod RE, Ismail RI, Hazem SS, Fahmy HA, and Abdel-Hamid NH (2023) First seroprevalence and molecular identification report of Brucella canis among dogs in Greater Cairo region and Damietta Governorate of Egypt, Veterinary World, 16(1): 229–238.
Wareth G, Abdel-Hamid NH, Hamdy MER, Elmonir W, Beleta EIM, El-Diasty M, Abdel-Glil MY, Melzer F, Neubauer H. Whole-genome sequencing (WGS) analysis of Brucella suis biovar 2 isolated from domestic pigs in Egypt for epidemiological and genetic diversity tracing. Vet Microbiol. 2023 Feb; 277:109637. doi: 10.1016/j.vetmic.2022.109637. Epub 2022 Dec 23. PMID: 36586209.
Fathy, S., Hamdy, M.E.R. and Osman, K.M. Incidence of Virulence Genes in Predominant Brucella Strains Among Domestic Animals in Egypt. Bulg. J. Vet. Med., 26 (2), 182-201 (2023). https://doi.org/10.15547/bjvm.2021-0033.
Ramy F. Ghobrial, Samar M. Atwa, Mohamed el Beskawy, Verginia M. Farag, Mohamed Eisa, Doaa Naguib, & Mohamed EL-Diasty. (2023). Comparative Immune Responses and Cytokine Gene Expressions in Sheep Vaccinated with Brucella abortus RB51 Vaccine and Brucella melitensis Rev. 1 Vaccine. Journal of Advanced Veterinary Research, 13(1), 1-8. Retrieved from https://www.advetresearch.com/index.php/AVR/article/view/1110.
Mohamed El-Diasty, Rana El-Said and Nour H. Abdel-Hamid. Sheep Brucellosis in Delta Region. Egyptian Journal of Animal Health 3, 3 (2023), 154-158. P-ISSN: 2735-4938 On Line-ISSN: 2735-4946Journal homepage: https://ejah.journals.ekb.eg.
Soliman S. Hazem, Rania I. Ismail, Hend I. Elsharkawy and Mohamed K. Al Kholi, Eman M. Younis, Saher A. El-Madawy. Overview on Brucellosis in Camels. Egyptian Journal of Animal Health 3, 3 (2023), 185-199. P-ISSN: 2735-4938 On Line-ISSN: 2735-4946 Journal homepage: https://ejah.journals.ekb.eg/*
Ashraf E. Sayour, Hossam E. M. Sayour, Momtaz A. Shahein, Samah Eid, Ahmed M. R. Fath El-Bab, and Hani F. Ragai. Urgency and Challenges of Digital Transformation in Animal Healthcare Based on Industry 4.0. Egyptian Journal of Animal Health 3, 3 (2023), 1-9. P-ISSN: 2735-4938 On Line-ISSN: 2735-4946Journal homepage: https://ejah.journals.ekb.eg/.

b) International conferences:

1
Participation of Dr Mahmoud ER Hamdy as a speaker on the subject: ANIMAL BRUCELLOSIS: HOST RANGE AND SYMPTOMS DIAGNOSIS OF BRUCELLOSIS IN DIFFERENT ANIMAL SPECIES "THE MOST SPECIFIC AND SENSITIVE TEST" in the webinar of Brucellosis November 23rd, 2023, Organised by STOR (WOAH, & FAO) Mediterranean Animal Health Network.

c) National conferences:

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- Participation of Dr. mahmoud ER Hamdy the FAO workshop on: Enhanced Knowledge, response and Prevention Measures toward Emerging and Endemic infectious Zoonotic diseases. 9-11 September 2023, Etab Hotel, Ismalia, Egypt.
- Participation of Dr. Mahmoud ER Hamdy on:
One Health Meeting conference . 18 April 2023, at Intercontinental Cairo Semiramis, Cairo, Egypt.

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?

Yes

a) Technical visit : 1

b) Seminars : 0

c) Hands-on training courses: 1

d) Internships (>1 month) 0

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
	ERITREA	

A		2
C	ERITREA	2

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO17025:2017	ISO 17025:2017	ISO 17025 EGAC 2022.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Serological tests, on serum: RBT - BAPAT - SAT - CFT - iELISA - cELISA.	EGAC (Egyptian Accreditation Council) Accredited by (ilacMRA) - Proficiency Testing with APHA, UK
Isolation and Identification	EGAC (Egyptian Accreditation Council) Accredited by (ilacMRA) - Proficiency Testing with APHA, UK
PCR and multiplex PCR	EGAC (Egyptian Accreditation Council) Accredited by (ilacMRA) - Proficiency Testing with APHA, UK
Detection of Brucella Antibodies in Milk of bovine: MRT - m.ELISA	EGAC (Egyptian Accreditation Council) Accredited by (ilacMRA) - Proficiency Testing with APHA, UK

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

Yes

Chapter 1.1.4. Biosafety and biosecurity: Standard for managing biological risk in the veterinary laboratory and animal facilities (version adopted in May 2015). Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, twelfth edition 2023.

TOR9: SCIENTIFIC MEETINGS

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

No

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

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
The webinar of Brucellosis November 23rd, 2023, Organised by STOR (WOAH, & FAO) Mediterranean Animal Health Network.	2023-11-23	The webinar of Brucellosis for Mediterranean and North African countries.	speaker	ANIMAL BRUCELLOSIS: HOST RANGE AND SYMPTOMS DIAGNOSIS OF BRUCELLOSIS IN DIFFERENT ANIMAL SPECIES "THE MOST SPECIFIC AND SENSITIVE TEST"

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. Do you network (collaborate or share information) with other 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

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.
External quality Insurance as required by ISO17025-2017.	Participant	18	APHA, UK

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

TITLE OF THE PROJECT OR CONTRACT	SCOPE	NAME(S) OF RELEVANT WOAH REFERENCE LABORATORIES
Whole-genome sequencing (WGS) analysis of Brucella suis biovar 2 isolated from domestic pigs in Egypt for epidemiological and genetic diversity tracing.	Whole-genome sequencing (WGS) analysis of Brucella suis biovar 2 isolated from domestic pigs in Egypt for epidemiological and genetic diversity tracing.	FLI (WOAH Ref Lab for Brucellosis in Germany
Brucellosis in Egypt: Evolution, current situation, epidemiology, assessment of national control measures, and genetic diversity and traceability of prevalent Brucella strains circulating among different animal species	Brucellosis in Egypt: Evolution, current situation, epidemiology, assessment of national control measures, and genetic diversity and traceability of prevalent Brucella strains circulating among different animal species	WOAH Ref Lab for Brucellosis . French Agency for Food, Environmental & Occupational Health & Safety (ANSES) Animal Health Laboratory - Bacterial Zoonoses Unit 14 rue Pierre et Marie Curie F-94701 Maisons-Alfort Cedex FRANCE
WGS and Practice Risk Analysis of Brucellae in domestic pigs in Egypt.	WGS and Practice Risk Analysis of Brucellae in domestic pigs in Egypt.	WOAH Ref Lab for Brucellosis . French Agency for Food, Environmental & Occupational Health & Safety (ANSES) Animal Health Laboratory - Bacterial Zoonoses Unit 14 rue Pierre et Marie Curie F-94701 Maisons-Alfort Cedex FRANCE

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?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the Test	WOAH Member Countries
External quality insurance as required by the ISO 17025 -2017	Participant	52	BAPAT	UNITED STATES OF AMERICA,

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report: