

WOAH Reference Laboratory Reports Activities 2024

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LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Brucellosis (Brucella abortus, Brucella melitensis)
*Address of laboratory:	7th Nadi El-Said Street, Dokki, Giza, Egypt. PO box: 12618
*Tel:	+201 222.28.14.76
*E-mail address:	merhamdy@hotmail.com
Website:	https://ahri.gov.eg
*Name (including Title) of Head of Laboratory (Responsible Official):	Prof. Dr Samah Eid, General Director of the Animal Health Research Insititute (AHRI) ministry of Agriculture & Land Reclamation.
*Name (including Title and Position) of WOA Reference Expert:	Prof. Dr Mahmoud Essam Rashad Hamdy, Chief Researcher, Department of Brucellosis Research, Animal Health Research Institute (AHRI)
*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 WOA Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
RBT	Yes	650	52
BAPAT	Yes	650	52
SAT in plate	Yes	375	0
CFT	Yes	489	0

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ELISA , Serum	Yes	430	52
MRT	Yes	166	0
ELISA, Milk	Yes	88	0
mSAT for canis		17	0
Direct diagnostic tests		Nationally	Internationally
Isolation, Identification and Biotyping	Yes	133	0
Multiplex PCR	Yes	112	0

TOR2: REFERENCE MATERIAL

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

Yes

Type of reagent available	Related diagnostic testing	Produced/ imported	Quantity supplied nationwide (ml, mg)	Quantity supplied at international level (ml, mg)	Name of beneficiary WOA Member Countries
Standard Reference positive and Negative sera	CFT, ELISA, RBPT, BAPAT, SAT.	Imported from VetQas, UK	< 10mL	< 10mL	EGYPT,
Standard Antigen for CFT	CFT	Imported from VetQas, UK	10-100mL	10-100mL	EGYPT,
Standard Antigen for SAT	SAT	Imported from VetQas UK		10-100mL	EGYPT,

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

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA 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 WOA Standards for the designated pathogen or disease?

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
ERIC PCR-Based Genotyping for traceback the sources of infections with Brucella species	2) Shokry, K., Hashad, M., Abdelhalem, M., Ahmed, Z., sayour, A., Selim, S., & Abdel-Hamid, N. (2024). ERIC PCR-Based Genotyping and Antimicrobial Susceptibility of Brucella melitensis Isolates Recovered from Slaughtered Camels in Egypt. Egyptian Journal of Veterinary Sciences, (), 1-11. doi:

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	10.21608/ejvs.2024.315932.2339
All Serological tests, Brucella Identification and Biotyping and Detection of Brucella DNA by PCR that are applied in our Lab are validated according to WOAHS Standards.	All publications from our Lab are based on Diagnostic methods validated according to WOAHS Standards.

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

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAHS Members?

Yes

Name of WOAHS 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
KUWAIT	2024-03-11	BAPAT - RBT - iELISA	52	0

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

Yes

Name of the WOAHS Member Country receiving a technical consultancy	Purpose	How the advice was provided
KUWAIT	Technical consultation on the control of Brucellosis and animal vaccination in Dairy cattle farms.	Technical Visit of Prof. Dr Mohammed Mosbah El-Diasty to Kuwait on Mars 2024
KUWAIT	Technical consultation on the control of Brucellosis and animal vaccination in Dairy cattle farms.	Technical Visit of Prof. Dr Mohammed Mosbah El-Diasty to Kuwait on December 2024
UNITED ARAB EMIRATES	Technical visit and review of the Epidemiology and control of Animal Brucellosis.	Technical Visit to UAE on January 2024
TURKEY	Cooperation with Animal Health Authorities	Technical visit to Turkey on June 2024
SAUDI ARABIA	Technical consultation on the Procedures for the application for WOAHS as a Reference Lab.	Remote, email and electronic contact
IRAQ	Technical consultations on the adjustment of the PCR technique to detect Brucella DNA	Remote, email and electronic contact

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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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
1- Animal Brucellosis in Egypt: in the last 20 years Evolution, Epidemiological Situation, Prevalent Brucella Strains, Genetic Diversity, and Assessment of Implemented National Control Measures	3 years	Intensive study on Brucellosis in Egypt on Prevalent Brucella Strains, Genetic Diversity, and Assessment of Implemented National Control Measures cooperation and interlab comparison between two WOA Reference Labs	WOAH/EU & National Reference Laboratory for Animal Brucellosis, Animal Health Laboratory, Paris-Est University/Anses, Paris, France	FRANCE

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

Yes

Research need : 1

Please type the Research need: Diagnosis of Brucella canis in canines

Relevance for WOA Disease Control, Standard Setting, Animal Welfare,

Relevance for the Code or Manual Manual,

Field Epidemiology and Surveillance, Diagnostics, Therapeutics,

Animal Category Terrestrial,

Disease:

Brucellosis (Brucella canis)

Kind of disease (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:

Notes:

Answer: The WOA Terrestrial Manual is Lacking the Diagnostic, epidemiology, control of Brucella canis in dogs and other canine species. It is important disease and of zoonotic importance. A chapter concerning this disease should be included in the WOA Diagnostic Manual for Terrestrial Animal diseases.

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:

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Data of Brucellosis in different animal species including Cattle, Buffaloes, Sheep, Goats, Camels and wild animals were collected through blood, milk and tissue samples submitted from the General Organization of Veterinary Services (GOVS). Approximately 450000 samples were collected and tested (screened) for Brucellosis by BAPAT & RBT. Only reactor samples are submitted to our Lab Department of Brucellosis Research (WOAH Ref Lab for Brucellosis) for testing and carried out Active Surveillance on Brucellosis in 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:

The obtained Data are reported monthly and yearly (officially and Periodically) submitted to the Animal Health Research Institute (AHRI) General Director, Veterinary Authorities (GOVS), and Public Health Authorities and (One Health Organizing Body) in Egypt. The Data is displayed in Scientific Publications and presented in Scientific Meetings, and Seminars.

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:

5

- 1) Nour H. Abdel-Hamid , Mai R. Zaffan , Mahmoud E. R. Hamdy , Maha A. Sabry , Mahmoud H. Abdel-Haleem , Ahmed Y. M. Elshiekh , Walid Elmonir and Mahmoud E. Hashad. (2024): Antimicrobial Susceptibility Testing and Molecular Genotyping of *Brucella melitensis* Isolates at the Human Animal Interface in Upper Egypt and Egyptian Boundaries. *Egypt. J. Vet. Sci.*, pp. 1-11. <https://ejvs.journals.ekb.eg>
- 2) Shokry, K., Hashad, M., Abdelhalem, M., Ahmed, Z., sayour, A., Selim, S., & Abdel-Hamid, N. (2024). ERIC PCR-Based Genotyping and Antimicrobial Susceptibility of *Brucella melitensis* Isolates Recovered from Slaughtered Camels in Egypt. *Egyptian Journal of Veterinary Sciences*, (), 1-11. doi: 10.21608/ejvs.2024.315932.2339
- 3) Fereig, R.M.; Mazeed, A.M.; El Tawab, A.A.A.; El-Diasty, M.; Elsayed, A.; Shaapan, R.M.; Abdelbaset, A.E.; Frey, C.F.; Alawfi, B.S.; Altwaim, S.A.; et al. Exposure to *Brucella* Species, *Coxiella burnetii*, and *Trichinella* Species in Recently Imported Camels from Sudan to Egypt: Possible Threats to Animal and Human Health. *Pathogens* 2024, 13, 179. <https://doi.org/10.3390/pathogens130201>
- 4) Mahmoud M. Eltholth, Ekram W. Abd El-Wahab, Nour H. Abdel-Hamid, Salem M, Mohamed El-Diasty, Mohammed Eldehieh, Yassien Badr, Yumna Aladdin Elsobky, Essam Kamel, Mai R. Zaffan and Yamen M. Hegazy. (2024): Prevalence of Brucellosis in Ruminants and The Risk of Human Exposure in Rural Delta of Egypt. *Egypt. J. Vet. Sci.* Vol. 55, No. 5, pp. 1257-1269 (2024). <https://ejvs.journals.ekb.eg/>
- 5) Ramy F. Ghobrial , Samar M. Atwa, Mohamed El Beskawy, Mohamed Eisa and Mohamed EL-Diasty. (2024). Sero-prevalence of Ovine and Caprine brucellosis and associated risk factors in Dakahlia and Damietta Governorates. *Egyptian Journal of Animal Health* 4, 1 (2024), 59-71. P-ISSN: 2735-4938 On Line-ISSN: 2735-4946. Journal homepage: <https://ejah.journals.ekb.eg>

b) International conferences:

2

- 1- Attending and Speaker in the Workshop on ((Brucellosis control measures applied by multisector to ensure compatibility and enhance mechanisms for collaboration under one health approach)). Prof Dr Mahmoud E R Hamdy (Attending and speaker) Prof Dr Hazem Soliman (Attending). Held on 22nd August, in Conrad Cairo Hotel Cairo, Egypt. August, 2024.

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2- Attending & Speaker at a Workshop on ((Prevention and Control Technologies for New-Emerging and Re-Emerging Significant Infectious Animal Diseases)). November 4-5, 2024, Harbin Veterinary Research Instituted, Chinese Academy of Agricultural Sciences, China. Prof Dr Mahmoud E R Hamdy (Attending & Speaker) & Prof Dr Nour Abdel Hamid (Attending). Held in Marriott Hotel Cairo, Egypt.

c) National conferences:

2

1- Attend Scientific Meeting on ((One Health Working Group on Zoonotic Diseases), 22nd December, Cairo, Egypt.

2-Scientific meeting with the Expert Committee of the Common Market for Eastern and Southern Africa (COMESA) - is a regional economic community in Africa with twenty-one-member state countries, that held in AHRI, Egypt to endorse our Lab as a reference Lab Brucellosis to COMESA countries.

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

0

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 : 4

b) Seminars : 1

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
C	YEMEN	10
B	CHINA (PEOPLE'S REP. OF)	3
A	KUWAIT	5
A	UNITED ARAB EMIRATES	3
A	TURKEY	3
A	KUWAIT	5

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system		
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adopted	Certificate scan (PDF, JPG, PNG format)	
ISO 17025 - 2017	C:\Users\MAHMOUD\Downloads\Screenshot_10-1-2025_103958_.jpeg	ISO 17025 2017.jpeg

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
RBT - BAPAT - SAT - CFT - ELISA serum - ELISA Milk - MRT - Identification of Brucella - PCR - Multiplex PCR mSAT B. canis	Egyptian Accreditation Council (EGAC) Accredited by ilac-MRA (France) All the proficiency tests (PT) of the used tests are done with VetQas UK

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

Yes

Our lab applies biosafety and biosecurity requirements concerning the Brucella organisms adopted by the Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Thirteenth Edition 2024, Chapter 1.1.4. ((Biosafety and biosecurity: Standard for managing biological risk in the veterinary laboratory and animal facilities)) (version adopted in May 2015). Our Lab keeps the biosafety and biosecurity record in our Lab complying with the requirements of the ISO, 17025 – 2017.

TOR9: SCIENTIFIC MEETINGS

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

No

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

No

TOR10: NETWORK WITH WOA?H REFERENCE LABORATORIES

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

Yes

24. Do you network (collaborate or share information) with other WOA?H Reference Laboratories designated for the same pathogen?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOA?H REF. LABS
Collaboration and exchange information of Animal Brucellosis	Participate and Organize	3	FLI, WOA?H for Brucellosis in Germany - Anses, WOA?H for Brucellosis in France - WOA?H for Brucellosis in Spain

25. Did you organise or participate in inter-laboratory proficiency tests with WOA?H Reference Laboratories designated for the same pathogen during the past 2 years?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/	No. participating Laboratories	Participating WOA?H Ref. Labs/
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	participant)		organising WOA Ref Lab
To maintain the continual training and competence of lab staff members. To assess the quality control through External Quality Insurance to comply with the requirements of the ISO 17025 2017 and to a	Participant	12-24	VetQas UK, FLI , Germany Anses, France

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?

Yes

Title of the project or contract	Scope	Name(s) of relevant WOA Reference Laboratories
Animal Brucellosis in Egypt: In the Last 20 Years	Animal Brucellosis in Egypt, Epidemiological Situation, Prevalent Brucella Strains, Genetic Diversity, and Assessment of Implemented National Control Measures of Brucellosis in Egypt.	WOAH/EU & National Reference Laboratory for Animal Brucellosis, Animal Health Laboratory, Paris-Est University/Anses, Paris, France.
Detection and genetic analysis of Brucella species in swine in Egypt.	Detection and genetic analysis of Brucella species in swine in Egypt and their phylogenetic relatedness with those isolated from European countries	WOAH/EU & National Reference Laboratory for Animal Brucellosis, Animal Health Laboratory, Paris-Est University/Anses, Paris, France.

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 during the past 2 years?

No

Our Lab is preparing to apply for accreditation as a PT provider, ISO/IEC 17043, and hoping to finalize the requirements next year.

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report: