

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 13 février 2023 12:51

Laboratory Information

Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Brucellosis (Brucella abortus, Brucella melitensis, Brucella suis)
Address of laboratory:	Department of Bacteriology, APHA, Woodham Lane, Addlestone, Surrey, UNITED KINGDOM
Tel.:	+44 1932 357610
E-mail address:	adrian.whatmore@apha.gov.uk
Website:	https://www.gov.uk/government/organisations/animal-and-plant-health-agency
Name (including Title) of Head of Laboratory (Responsible Official):	Mr David Holdsworth
Name (including Title and Position) of WOA Reference Expert:	Dr Adrian Whatmore
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	
Indirect diagnostic tests		Nationally	Internationally
iELISA (serum)	yes	6825	96
cELISA	yes	12872	265

CFT	yes	738	763
RBT	yes	4075	103
SAT	yes	439	86
iELISA (milk)	yes	33568	0
RSA (B. canis)	no	619	778
SAT (B. canis)	no	2955	438
iELISA (B. canis)	no	522	0
Direct diagnostic tests		Nationally	Internationally
Bacterial culture	yes	1806	20
Real time PCR	yes	49	12
Bruceladder	yes	2	6
SNP typing	yes	1	6
MLST	yes	8	6
MLVA	yes	8	6
Whole genome sequencing	no	8	10

TOR2: REFERENCE MATERIAL

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

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?H MEMBER COUNTRIES
OIEISS	All serological tests	Produced		< 10mL	CANADA CYPRUS FINLAND ITALY
ISaBmS	All serological tests	Produced		< 10mL	COLOMBIA THE NETHERLANDS
OIE ELISA Standrads	ELISAs	Produced		10-100mL	COLOMBIA CYPRUS FINLAND ITALY THE NETHERLANDS

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

Yes

TYPE OF REAGENT AVAILABLE	RELATED DIAGNOSTIC TEST	PRODUCED/ PROVIDE	AMOUNT SUPPLIED NATIONALLY (ML, MG)	AMOUNT SUPPLIED INTERNATIONALLY (ML, MG)	NO. OF RECIPIENT WOA?H MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
Diagnostic kit	Milk iELISA	Produced	2 kits		1	Europe
Diagnostic kit	cELISA	Produced	10 kits	14 kits	5	Africa Europe
						Africa

Antigen	RBT	Produced	400ml	500ml	4	Europe
Antigen	Milk Ring Test	Produced	5500ml	200ml	2	Europe
Antigen	Serum Agglutination Test	Produced	400ml	800ml	6	Africa Asia and Pacific Europe
Antigen	CFT	Produced	100ml	100ml	2	Asia and Pacific Europe
Positive antiserum	Various	Produced	22ml	42ml	7	America Asia and Pacific Europe
Monospecific serum	Phenotypic characterisation	Produced		8ml	1	Europe

4. Did your laboratory produce vaccines?

No

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

No

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

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

Yes

NAME OF THE WOAHA MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
UNITED ARAB EMIRATES	Outbreak support	Remote

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

				WOAHA MEMBER
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Title of the study	Duration	PURPOSE OF THE STUDY	PARTNERS (INSTITUTIONS)	COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY
Role of Camels in Transmission of Brucella spp and Middle East Respiratory Syndrome	4 years	Role of Camels in Transmission of Brucella spp and Middle East Respiratory Syndrome	Washington State University, Kenya Medical Research Institute, Kenya Zoonotic Disease Unit, APHA, CDC, University of Idaho	KENYA UNITED STATES OF AMERICA
Identification of emerging Brucella species: new threats for human and animals (IDEMBRU)	3 years	Identification of emerging Brucella species: new threats for human and animals (IDEMBRU)	Contributing partners: APHA, ANSES, BfR, FLI, INIAV, INSA, IZSAM, NDRVMI, WBVR	BULGARIA FRANCE GERMANY ITALY PORTUGAL THE NETHERLANDS

TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

No

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

No

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:

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Dadar, M., Alamian, S., Tadayon, K., Ashford R.T., Whatmore A.M. (2022) Molecular characterization of zoonotic Brucella species isolated from animal and human samples in Iran. *Acta Tropica*. 229, 106363
<https://doi.org/10.1016/j.actatropica.2022.106363>

Duncombe, L., Howells, L., Haughey, A., Taylor, A., Kaveh, D., Erdenlig, A., S., Hitchen, P., Haslam, S., Mandal, S.S., Ganesh, N.J., Bundle, D., and McGiven, J. (2022) The tip of Brucella O-polysaccharide is a potent epitope in response to brucellosis infection and enables short synthetic antigens to be superior diagnostic reagents. *Microorganisms*. 10: 708. <https://doi.org/10.3390/microorganisms10040708>

Touloudi, A., McGiven, J., Cawthraw, S., Valiakos, G., Kostoulas, P., Duncombe, L., et al. (2022) Development of a Multiplex Bead Assay to Detect Serological Responses to Brucella Species in Domestic Pigs and Wild Boar with the Potential to Overcome Cross-Reactivity with Yersinia enterocolitica O:9. *Microorganisms*, 10: 1362. <https://doi.org/10.3390/microorganisms10071362>

b) International conferences:

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Brucellosis 2022 International Research Conference (Teramo, September 2022)

McGiven, J. (Keynote presentation): The diagnosis of brucellosis

McGiven, J. (Oral Presentation): Brucella canis diagnosis (Satellite meeting 'Seminar on Brucella canis').

Howells, L. (Oral presentation): Investigation into the efficacy of rLPS based serodiagnostic antigens.

Ashford, R. et al. (Poster): Evaluation of DNA extraction methods for long-read whole genome sequencing of atypical *Brucella* sp. isolates

Dainty, A. et al. (Poster): The epidemiology of human brucellosis in the British Isles 2000-2020: an ongoing travel-related threat in a non-endemic region

Duncombe, L. et al. (Poster): Evaluating the OPS linkage composition for all biovar type strains of *B. abortus*, *B. melitensis* and *B. suis* and strains described by the WOAAH for use in the production of vaccines and diagnostics

Haughey, A. et al. (Poster): *Brucella canis* in Great Britain: Cases, Case Definitions, Management and Control

Withall, J. et al. (Poster): The isolation of atypical *Brucella* species from captive Amazon milk frogs (*Trachycephalus resinifictrix*)

Maryam Dadar, Saeed Alamian, Roland T. Ashford and Adrian M. Whatmore. (Poster). Genetic diversity of *Brucella* spp. isolates in Iran: A multi-locus sequence typing analysis.

Gemma Smith, Georgina Angel, Nicholas Beeching, Mona Dave, Andrew Frost, Alessandro Gerada, John McGiven, Derren Ready, Katherine Russell, Bengu Said, Jennifer Taylor, Jane Williams, Stephen Wyllie, Fiona Neely, Andrew Taylor, Roland Ashford, Charles Beck. (Poster) First confirmed domestic transmission of *Brucella canis* between dogs in the UK: outbreak investigation and public health risk assessment.

c) National conferences:

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

Dr John McGiven contributed to the CVO blog for World Zoonoses Day: "How you can help protect our dogs from *Brucella canis*" (6 July 2022). <https://vets.blog.gov.uk/2022/07/06/world-zoonoses-day-how-you-can-help-protect-our-dogs-from-brucella-canis/>

Dr John McGiven contributed to an article in the Vet Record (September 2022) Compassion v biosecurity – are dog rescues driving disease emergence? [Section in "Key Information on *Brucella canis*"] pages 192-193.

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAAH Members?

No

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO 9001:2015	PDF	ISO9001 certificate 2020-2023.pdf

ISO17025:2017

PDF

17025 certificate.pdf

19. Is your quality management system accredited?

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

Yes

Dedicated high containment unit (ADCP3) for brucellosis work.

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?

No

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?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOA REF. LABS/ ORGANISING WOA REF. LAB.
VETQAS PT0015 B. abortus CFT/SAT	Organiser	1	Central Veterinary Research Laboratory, UNITED ARAB EMIRATES
VETQAS PT0016 B. abortus ELISA	Organiser	2	Animal and Plant Quarantine Agency (QIA)Ministry of Agriculture, Food and Rural Affairs (MAFRA), KOREA Central Veterinary Research Laboratory, UNITED ARAB EMIRATES
VETQAS PT0020 B. abortus Rose Bengal Test	Organiser	2	Animal and Plant Quarantine Agency (QIA)Ministry of Agriculture, Food and Rural Affairs (MAFRA), KOREA Central Veterinary Research Laboratory, UNITED ARAB EMIRATES
VETQAS PT0022 B. canis	Organiser	1	Animal and Plant Quarantine Agency (QIA)Ministry of Agriculture, Food and Rural

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
IDEMBRU (European Joint Funding)	Toolkits for Brucella characterisation	France, Germany, Italy

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
VETQAS PT0015 B. abortus CFT/SAT	Organiser and Participant	31	Africa America Asia and Pacific Europe
VETQAS PT0016 B. abortus ELISA	Organiser and Participant	28	America Asia and Pacific Europe MiddleEast
VETQAS PT0018 B. abortus milk iELISA	Organiser and Participant	17	Africa America Europe MiddleEast
VETQAS PT0019 B. abortus Milk Ring Test	Organiser and Participant	4	Africa Europe MiddleEast
VETQAS PT0020 B. abortus Rose Bengal Test	Organiser and Participant	72	Africa America Asia and Pacific Europe MiddleEast
VETQAS PT0022 B. canis	Organiser and Participant	10	America Europe MiddleEast

VETQAS PT0025 B. abortus Stain Slide and ID	Organiser and Participant	19	Europe MiddleEast Africa America
VETQAS PT0187 Brucella PCR	Organiser and Participant	12	Asia and Pacific Europe MiddleEast

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Leading consortium of OIE Reference Laboratories in WOA?H Manual chapter update.		Addressed final technical queries/suggestions from Commission prior to adoption.

29. Additional comments regarding your report: