OIE Reference Laboratory Reports Activities

Activities in 2020

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Q fever
Address of laboratory:	Anses, Laboratoire de Sophia Antipolis, Unité de fièvre Q animale (Animal Q fever unit), 105, route des Chappes, BP 111, 06902 Sophia Antipolis, FRANCE
Tel.:	+33-4 92.94.37.00
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E-mail address:	Elodie.ROUSSET@anses.fr
Website:	https://www.anses.fr/en/content/sophia-antipolis-laboratory
Name (including Title) of Head of Laboratory (Responsible Official):	Richard Thiéry
Name (including Title and Position) of OIE Reference Expert:	Elodie Rousset
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	
Indirect diagnostic tests		Nationally	Internationally
ELISA (ruminant serum)	Yes (in black)	252	0
ELISA (mulit-species serum)	No (exploratory)	16	0
Direct diagnostic tests		Nationally	Internationally
Quantitative real time PCR	Yes (table B)	415	0
MLVA genotyping	Yes (table B)	0	0
Strain isolation (mouse, cultural cell)	Yes (in black)	11	0
Whole genome sequencing	Yes (table B)	0	0

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?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
Serum standard (0.5 mL unit)	Complement fixation	Produced	0	0	0	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East
Calibration serum standard (0.4 mL unit)	ELISA (serology)	Produced	18.4	6	3	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East
Quantified genomic DNA standard	– qPCR, Genotyping	Produced	0.05	0	0	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East
Quantified inactivated purified bacteria	qPCR	Produced	12	2	1	☐Africa ☒Americas ☐Asia and Pacific ☐Europe ☐Middle East
Reference strain Nine Mile (phase 2)	Culture	Produced	0	0	0	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East

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?

No

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

No

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?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
INDIA	Request for recommendations on commercial Elisa kits for seroprevalence studies Feedback on the difficulties in evaluating the kits (main publications indicated); relevance of the sera used and development of statistical models required (thesis work in progress INRAe-VetAgroSup and ANSES Sophia, France, on the evaluation of the 3 widely used kits)	Exchange by direct emails
RUSSIA	Request (to the OIE reference laboratory) for contact details of organizers of inter-laboratory proficiency testing (ILPT) for Q fever diagnostic methods. Despite the lack of centralization of these data for Q fever as well as others targets, some contacts were proposed for Q fever (Anses, Sciensano, IZS Venezie, WUR).	Exchange by direct emails
GREECE	Request for an external evaluation Organization of bilateral proficiency test, information provided on ELISA reference material	Exchange by direct emails
GERMANY	Question on the new European Animal Health Law Q fever will be in category E, so surveillance will be mandatory in the territory There are no gold standard methods for animal Q fever (domestic ruminants). However, instructions are stipulated in this EFSA report published in 2010 to help with the implementation of surveillance. https://www.efsa.europa.eu/en/supporting/pub/en-48 In addition, an observation on the quality of the laboratories network is possible through the Inter-Laboratory Proficiency Testing Programs that we organize	Exchange by direct emails
INDIA	Question on the interpretations of sheep and cattle survey results obtained (seropositity, no shedding, no abortion)	Exchange by direct emails
BULGARIA	Information on vaccine used for sheep, cattle and goats and measures in case of positive results in herds (OIE alert in june : about 20 human cases)	Multilateral request via EFSA focal point (mails)

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?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
Demonstration of the circulation of Q fever in the São Paulo region	4 mois	Conclusion of a work in the form of a joint publication	Departamento de Higiene Veterinária e Saúde Pública, Universidade Estadual Paulista “Júlio de Mesquita Filho”, São Paulo, Brazil	BRAZIL
Implementation of a new genotyping method (SNP HRM) (Project still in progress)	> 1 year (report vs Covid19)	Validation of the method on a bank of strains representative of diversity (isolation, production, DNAs and typing)	Departamento de Higiene Veterinária e Saúde Pública, Universidade Estadual Paulista “Júlio de Mesquita Filho”, São Paulo, Brazil	BRAZIL

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?

No

If the answer is no, please provide a brief explanation of the situation:
No surveillance in the country of our laboratory, no centralization or sharing of data for other countries according to harmonized and usable protocols. Disease not regulated in most countries. Expected evolution in Europe (animal health law in 2021 which envisages surveillance of Q fever, which will be classified as category E)

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:
Same above

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: 2
Medkour, H., B. Davoust, M. Angelakis, R. Thiéry, D. Raoult, E. Rousset, P. Parola, and C. Eldin. 2020. "A sporadic case of acute Q fever and identification of the animal source of the infection." Folia Microbiologica. https://doi.org/doi: 10.1007/s12223-020-00788-3.

Mioni, M. S. R., F. B. Costa, B. L. D. Ribeiro, W. S. R. Teixeira, V. C. Pelicia, M. B. Labruna, E. Rousset, K. Sidi-Boumedine, R. Thiéry, and J. Megid. 2020. "Coxiella burnetii in slaughterhouses in Brazil: A public health concern." PLoS One 15 (10): e0241246. https://doi.org/10.1371/journal.pone.0241246

b) International conferences: 0

c) National conferences: 2
Lurier, T., Rousset, E., P. Gasqui, C. Sala, C. Claustre, D. Abrial, P. Dufour, E. Morignat, R. de Crémoux, K. Gache, M-L. Delignette-Muller, F. Ayral et E. Jourdain. 2020. " Evaluation des caractéristiques de trois kits ELISA pour le diagnostic de la fièvre Q chez les ruminants domestiques par des modèles à classes latentes. " Groupe de Suivi OSCAR (Observatoire et suivi des causes d'avortements chez les ruminants), GDS-France, Paris/Distanciel, France, 23 septembre 2020.
Rousset, E., M. Poivre, S. Sharple, J. Lafon, K. Gache, R. Thiéry, A. Belgen, A. Raptopoulo et E. Jourdain. 2020. " Investigation épidémiologique dans une exploitation ovine d'un Lycée (LPA) suite à des signalements de cas humains de fièvre Q." JSDA, Journées Scientifiques et Doctorale de l'Anses, Maisons-Alfort/Distanciel, France, 3 et 4 septembre 2020.

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	ATTESTATION ACCREDITATION COFRAC 2019.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ELISA on serum : IDEXX Q Feber Ab Test (IDEXX)	COFRAC
ELISA on serum : ID Screen® Q fever indirect (ID.vet)	COFRAC
ELISA on serum : PrioCHECK™ Ruminant Q Fever Ab Plate Kit (ThermoFischerscientific)	COFRAC
qPCR on vaginal swab (house method)	COFRAC

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
ELISA methods on ruminants sera (given kit)	6	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐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:

Some basic documents on animal Q fever :
-The table 1 in the OIE manual Q fever chapter here
https://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/3.01.16_Q_FEVER.pdf
-The modalities proposed in 2010 by European experts on Q fever :
https://www.efsa.europa.eu/en/supporting/pub/en-48
-The discontools document to better understand knowledges and gap :
https://discontools.eu/database/57-q-fever.html

A comment to propose a tool to OIE members that could be managed by the OIE:
There is no listing of providers of Proficiency Tests for Q fever diagnostics. This centralization could be considered within the OIE. This requires questioning NRLs in different countries to identify PT organizers.