OIE Reference Laboratory Reports Activities

Activities in 2021

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Enzootic abortion of ewes (Ovine chlamydiosis)
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Name (including Title) of Head of Laboratory (Responsible Official):	Nicole Borel, Prof. Dr. med. vet., Dipl. ECVP, FVH Pathology
Name (including Title and Position) of OIE Reference Expert:	Nicole Borel, Prof. Dr. med. vet., Dipl. ECVP, FVH Pathology
Which of the following defines your laboratory? Check all that apply:	Academic

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 (IDEXX Chlamydia)	no	24	0
ELISA (ID-Vet)	no	2	0
ELISA (MVD Enfer Chlamydia abortus)	no	139	0
Direct diagnostic tests		Nationally	Internationally
real-time PCR Chlamydiaceae	yes	786	0
real-time PCR Chlamydia abortus	yes	5	30
16S rRNA PCR & sequencing	no	17	10
DNA Microarray	yes	10	0
Immunohistochemistry for Chlamydiaceae	yes	5	0
real-time PCR Chamydia pecorum	no	683	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
FFPE block positive for C. abortus	Validation of immunohistochemistry	stored	0	2 blocks	2	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☒Middle East
Chlamydia abortus plasmid standard DNA	positive control for real-time PCR	produced	0	115 ul	4	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☒Middle East
Chlamydia abortus genomic standard DNA	control for real-time PCR	stored	0	50 ul	1	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☒Middle East
Chromosomal DNA of C. abortus/C. pecroum/C. psittaci	validation of new diagnostic test	stored/produced	0	75 ul	1	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☒Middle East
Sheep serum samples	validation serology	stored	4 sera (total 2 mL)	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?

Yes

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

No

Name of the new test or diagnostic method or vaccine developed	Description and References (Publication, website, etc.)
ompA Typing for Chlamydia psittaci	Method was establisehd according to Sachse et al., 2008
real-time PCR for Chlamydia abortus	Method was established according to Pantchev et al., 2009

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?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
TURKEY	October	0	31

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

No

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
OIE Twinning project	3 years	Training, method transfer, research collaboration	Pendik Veterinary Control Institute, Istanbul	TURKEY
Chlamydia pecorum in ruminants and pigs	2 years	Research collaboration method transfer	University of the Sunshine Coast, Queensland	AUSTRALIA
Chlamydia suis in domestic pigs	2 years	Research collaboration, method transfer, transfer of study samples and their examination	Department of Farm Animals and Veterinary Public Health, University Clinic for Swine, University of Veterinary Medicine, Vienna	AUSTRIA
Origin of tetracycline resistance in Chlamydia suis	3 years	Research collaboration	University of Laval, Quebec	CANADA
Chlamydial transformation	3 years	Research collaboration, method transfer	Lübeck University, Lübeck	GERMANY
OIE ring trial, C. abortus PCR methods	1 year	Improvement of diagnostic methods	FLI Jena	GERMANY
OIE ring trial, C. abortus PCR methods	1 year	Improvement of diagnostic methods	ANSES, Paris	FRANCE
OIE ring trial, C. abortus PCR methods	1 year	Improvement of diagnostic methods	Moredun Research Institute, Edinburgh	UNITED KINGDOM
Chlamydia suis in pigs	2 years	Research collaboration, method transfer	Vetmeduni, Vienna	AUSTRIA

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:
The IVPZ only investigated local outbreaks of ovine Chlamydiosis in Switzerland. Regulations regarding ovine Chlamydiosis are variable between countries.

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:
The data is recorded/reported by the Federal Veterinary Office (FVO). The IVPZ notifies the cantonal authorities about positive cases. The cantons report to the FVO.

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: 10
Di Francesco A, Morandi F, Marti H, Santagati C, Borel N. Chlamydia suis and tetracycline resistance genes un Italian wild boar (Sus scrofa)Vet Ital. 2021 Jul 27;57(2).

Agerholm JS, Klas EM, Damborg P, Borel N, Pedersen HG, Christoffersen M. A Diagnostic Survey of Aborted Equine Fetuses and Stillborn Premature Foals in Denmark. Front Vet Sci. 2021 Nov 10;8:740621.

Ciuria S, Brouwer MSM, de Gier MM, van Zeeland Y, Bossers A, Prähauser B, Schädler J, Hatt JM, Heijne M, Borel N. Chlamydia caviae in Swiss and Dutch Guinea Pigs-Occurrence and Genetic Diversity Pathogens. 2021 Sep 23;10(10):1230.

Stalder S, Marti H, Borel N, Vogler BR, Pesch T, Prähauser B, Wencel P, Laroucau K, Albini S. Falcons From the United Arab Emirates Infected With Chlamydia psittaci/ C abortus Intermediates Specified as Chlamydia buteonis by Polymerase Chain Reaction J Avian Med Surg. 2021 Sep;35(3):333-340.

Anstey SI, Kasimov V, Jenkins C, Legione A, Devlin J, Amery-Gale J, Gilkerson J, Hair S, Perkins N, Peel AJ, Borel N, Pannekoek Y, Chaber AL, Woolford L, Timms P, Jelocnik M. Chlamydia Psittaci ST24: Clonal Strains of One Health Importance Dominate in Australian Horse, Bird and Human Infections. Pathogens. 2021 Aug 11;10(8):1015.

Bressan M, Rampazzo A, Kuratli J, Marti H, Pesch T, Borel N. Occurrence of Chlamydiaceae and Chlamydia felis pmp9 Typing in Conjunctival and Rectal Samples of Swiss Stray and Pet Cats Pathogens. 2021 Jul 28;10(8):951.

Marti H, Bommana S, Read TD, Pesch T, Prähauser B, Dean D, Borel N. Generation of Tetracycline and Rifamycin Resistant Chlamydia Suis Recombinants. Front Microbiol. 2021 Jun 30;12:630293.

Rohner L, Marti H, Torgerson P, Hoffmann K, Jelocnik M, Borel N. Prevalence and molecular characterization of C. pecorum detected in Swiss fattening pigs. Vet Microbiol. 2021 May;256:109062.

Dias-Alves A, Cabezón O, Borel N, López-Olvera JR, Mentaberre G, Lavín S, Fernández Aguilar X. Molecular Detection and Identification of Chlamydiaceae in the Eyes of Wild and Domestic Ruminant Hosts from Northern Spain. Pathogens. 2021 Mar 23;10(3):383.

Popelin-Wedlarski F, Roux A, Aaziz R, Vorimore F, Lagourette P, Crispo M, Borel N, Laroucau K. Captive psittacines with Chlamydia avium infection. Avian Dis. 2020 Dec 1;64(4):542-546.

b) International conferences: 13
15.12.2021: Chlam talk seminar series, CBRS Inaugural session (digital meeting)

17.11.2021: Chlam talk seminar series, CBRS Inaugural session (digital meeting)
27.10.2021: Chlam talk seminar series, CBRS Inaugural session (digital meeting)
29.09.2021: Chlam talk seminar series, CBRS Inaugural session (digital meeting)
15.-17.09.2021: 4th Joint ESVP, ECVP and ESTP Cutting Edge Pathology Congress (virtual)
28.07.2021: Chlam talk seminar series, CBRS Inaugural session (digital meeting)
23.06.2021: Chlam talk seminar series, CBRS Inaugural session (digital meeting)
28.04.2021: Chlam talk seminar series, CBRS Inaugural session (digital meeting)
21.04.2021: Gemeinsame Arbeitstagung der Nationalen Referenzlabore Chlamydiose, Q-Fieber, Paratuberkulose und Tuberkulose der Rinder, FLI Jena, Deutschland (digital meeting)
24.03.2021: Chlam talk seminar series, CBRS Inaugural session (digital meeting)
24.02.2021: Chlam talk seminar series, CBRS Inaugural session (digital meeting)
27.01.2021: Chlam talk seminar series, CBRS Inaugural session (digital meeting)

c) National conferences: 4
21.10.2021: BLV Laborleitertagung, Bern
09.10.2021: BGK-Tagung, VSF ZH
11.05.2021: Vetsuisse Nutztierabend: Coxiella burnetii bei Rind und Ziegen, Themen aus der Reproduktionsmedizin (digital meeting)
02.-03.09.2021: Swiss Society for Microbiology (SGM, SSM) annual meeting 2021 (virtual)

d) Other:
(Provide website address or link to appropriate information) 4
Homepage:
- https://www.vetpathology.uzh.ch/de/Diagnostik/infektionspatho.html (Diagnostics), - https://www.vetpathology.uzh.ch/de/forschung/Chlamydia-related-diseases-in-animals-and-their-zoonotic-potential.html (research)

LinkedIn: https://www.linkedin.com/company/chlamydia-research-group-borel-laboratory/

ResearchGate: https://www.researchgate.net/lab/Chlamydia-research-group-Borel-Laboratory-Nicole-Borel

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?

Yes

a) Technical visits: 5
b) Seminars: 5
c) Hands-on training courses: 5
d) Internships (>1 month): 1

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
a,b,c	Turkey	4
a,b,c,d	Italy	1

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	Akkreditierung-Urkunde-2020-2025.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Histology, Immunhistochemistry, molecular methods, sequencing	SAS (Schweizerische Akkreditierungsstelle)

17. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?

No

(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?

Yes

Purpose of the proficiency tests: [1]	Role of your Reference Laboratory (organiser/ participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
Chlamydia PCR and serology Proficiency Testing in 2021	Organizer and Participant	46	FLI, Jena, Germany ANSES, Paris, France Swiss Diagnostic Laboratories, Pendik Veterinary Control Institute, Istanbul

[1] *validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.*

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?

Yes

Title of the project or contract	Scope	Name(s) of relevant OIE Reference Laboratories
OIE ring trial (2021-2022), molecular test validation for C. abortus	Comparison of molecular methods for C. abortus	IVPZ, Zurich FLI, Jena, Germany ANSES, Paris, France

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
Comparison of C. abortus PCR results between the Pendik Veterinary Control Institute, Istanbul and the OIE reference laboratory (IVPZ)	2	☐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: