World Organisation for Animal Health

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WOAH Reference Laboratory Reports Activities 2025

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LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	Enzootic abortion ewes (ovine chlamydiosis)
***Address of laboratory:**	
***Tel:**	+330149771350
***E-mail address:**	karine.laroucau@anses.fr
Website:	
***Name (including Title) of Head of Laboratory (Responsible Official):**	Dr Zientara Stéphan
***Name (including Title and Position) of WOAH Reference Expert:**	Dr Laroucau Karine
***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 WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
C. abortus ELISA	Yes	114	315
Direct diagnostic tests		Nationally	Internationally
real-time PCR Chlamydiaceae	Yes	10	37
real-time PCR C. abortus	Yes	4	37
PCR-HRM vaccine typing	Yes	4	0

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?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOAH Member Countries	Country of recipients
Positive C. abortus serum	ELISA	produced	6*500 µL	0	2	FRANCE,
DNA of Chlamydia reference strains	real-time PCR	produced	1*100 µL	0	1	FRANCE,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

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?

No

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

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

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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
CANADA	consultantcy on serology reagents	remote assistance by email
TURKEY	Advices on typing methods	remote assistance by email
SERBIA	Request on proficiency testing	remote assistance by email

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

No

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

No

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:

8

Borel N, Longbottom D, Greub G, Albini S, Vanrompay D, Laroucau K. Zoonotic infections due to avian Chlamydia abortus: what are we missing? Lancet Microbe. 2025 Nov;6(11):101197. doi: 10.1016/j.lanmic.2025.101197. Epub 2025 Aug 20.PMID: 40848734

Ornelas-Eusebio E, Vorimore F, Aaziz R, Mandola ML, Rizzo F, Marchino M, Nogarol C, Risco-Castillo V, Zanella G, Schnee C, Sachse K, Laroucau K. Trichosporon asahii: A Potential Growth Promoter for C. gallinacea? Implications for Chlamydial Infections and Cell Culture. Microorganisms. 2025 Jan 27;13(2):288. doi: 10.3390/microorganisms13020288.PMID: 40005655

Bralet T, Aaziz R, Tornos J, Gamble A, Clessin A, Lejeune M, Galon C, Michelet L, Lesage C, Jeanniard du Dot T, Desoubeaux G, Guyard M, Delannoy S, Moutailler S, Laroucau K, Boulinier T. High-throughput microfluidic real-time PCR as a promising tool in disease ecology. J Anim Ecol. 2025 Sep;94(9):1625-1637. doi: 10.1111/1365-2656.70088. Epub 2025 Jun 27.PMID: 40576224

Schnee C, Laroucau K, Livingstone M, Aaziz R, Marti H, Longbottom D, Borel N. Cross-European laboratory evaluation of commercial and in-house real-time PCR assays for the detection of Chlamydia abortus in small ruminants. Res Vet Sci. 2025 Jun;188:105613. doi: 10.1016/j.rvsc.2025.105613. Epub 2025 Mar 15.PMID: 40120389

Hölzer M, Reuschel C, Vorimore F, Laroucau K, Sachse K. Exploring the genomic landscape of Chlamydiifrater species: novel features include multiple truncated major outer membrane proteins, unique genes and chlamydial plasticity zone orthologs. Access Microbiol. 2025 Feb 3;7(2):000936.v3. doi: 10.1099/acmi.0.000936.v3. eCollection 2025.PMID: 40697354
Le Gall-Ladevèze C, Vollot B, Hirschinger J, Lèbre L, Aaziz R, Laroucau K, Guérin JL, Paul M, Cappelle J, Le Loc'h G. Limited transmission of avian influenza viruses, avulaviruses, coronaviruses and Chlamydia sp. at the interface between wild birds and a free-range duck farm. Vet Res. 2025 Feb 8;56(1):36. doi: 10.1186/s13567-025-01466-3.PMID: 39923111
Lawson JM, Verheyen KL, Laroucau K, Bryan JS, Smith KC, Foote AK, de Mestre AM. Umbilical cord torsion abortion: the gross and histological features of affected umbilical cords and fetal membranes. Theriogenology. 2026 Mar 1;252:117771. doi: 10.1016/j.theriogenology.2025.117771. Epub 2025 Nov 21.PMID: 41338002
Monireh Khordadmehr, Faeghehossadat Mousavi, Katayoon Nofouzi, Karine Laroucau, Farinaz Jigari Asl, Moein Zehtab Najafi, Seyed Hossein Jarolmasjed Histopathological and Molecular Investigation of Chlamydia felis Infection in Cat Uterus Underwent Ovariohysterectomy Surgery. 2025. Iranian Journal of Veterinary Surgery

b) International conferences:

1
Laroucau K. ChlamHealth - zoonotic chlamydial infections: What's new? Part 1: birds. ESGMAC (ESCMID Study Group for Mycoplasma and Chlamydia Infections (ESGMAC)) – Zoonotic and veterinary chlamydiae. December 10 2025.

c) National conferences:

1
Bralet T, Boulinier T, Laroucau K. Hétérogénéité des communautés d'agents infectieux des populations d'oiseaux marins des îles subantarctiques CNFRAA (21èmes Journées Scientifiques du CNFRAA - CNFRAA) Grenoble

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 : 0

b) Seminars : 0

c) Hands-on training courses: 0

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
D	BRAZIL	1

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO17025	PDF	Attestation 1-7341_Rév02.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
real-time PCR Chlamydiaceae	COFRAC

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

Yes

Regular risk assessments for Chlamydia agents are performed and updated as needed. Biosafety and biosecurity measures are in place, overseen by a biological risk manager responsible for compliance, training, and emergency response. The BSL-3 laboratory is regularly inspected by national authorities to ensure safety and regulatory compliance.

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?

No

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. Are you a member of a network of WOAH Reference Laboratories designated for the same pathogen?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS
Enzootic abortion of ewes	participant	3	WOAH ref lab from Germany (FLI), Switzerland (IVPZ) and France (Anses)

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

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOAH Ref. Labs/ organising WOAH Ref Lab
Assessment of technical competence of laboratories in detection of Chlamydiaceae and C. abortus genomic DNA in different matrices by real-time PCR	participant	3	WOAH ref lab from Germany (FLI), Switzerland (IVPZ) and France (Anses)
Assessment of technical competence of laboratories in detection of Chlamydiaceae and C. abortus - specific antibodies in small ruminants by ELISA	participant	3	WOAH ref lab from Germany (FLI), Switzerland (IVPZ) and France (Anses)

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?

No

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 during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Assessment of the technical competence of laboratories in detecting Chlamydia psittaci, C. abortus, and C. pecorum genomic DNA by PCR	participant (2024)	33	LVU Chlamydien 2024	BELGIUM, FRANCE, GERMANY, POLAND, SWITZERLAND,
Assessment of the technical competence of				BELGIUM. FRANCE.

laboratories in detecting Chlamydia psittaci, C. abortus, and C. pecorum detecting chlamydia infection in small ruminants by serology	participant (2024)	33	LVU Chlamydien 2024	GERMANY, POLAND, SWITZERLAND,

TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
Preparing draft and discussing case definition	email and online meeting	Development of the case definition for infection with Chlamydia abortus (enzootic abortion of ewes, ovine chlamydiosis)

29. Additional comments regarding your report:

No