World Organisation for Animal Health

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WOAH Reference Laboratory Reports Activities 2024

This report has been submitted: 31 janvier 2025 09:47

LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	Avian chlamydiosis
***Address of laboratory:**	22 rue Pierre et Marie Curie / Maisons-Alfort 94706
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***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
Direct diagnostic tests		Nationally	Internationally
real-time PCR Chlamydiacea family	Yes	608	139
real-time PCR Chlamydia psittaci	Yes	86	3
real-time PCR Chlamydia abortus	No	25	3

real-time PCR Chlamydia gallinacea	No	34	3
real-time PCR Chlamydia avium	No	42	3

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
DNA of Chlamydia reference strains	real-time PCR	produced	1 x 100 µL	0	1	FRANCE,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

No

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
High-throughput microfluidic real-time PCR for tfor the detection of a wide range of avian infectious agents, including Chlamydiaceae	Microfluidic high-throughput real-time polymerase chain reaction (Htrt PCR) has emerged as a promising first-line tool for detecting a wide range of infectious agents and addressing disease ecology questions. This technology enables the simultaneous screening of large batches of samples by real-time PCR for up to dozens of targeted infectious agents (e.g., screening 28 infectious agents in 45 samples simultaneously). (Manuscript submitted for publication.)

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?

No

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

No

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
BRAZIL	Consultancy and training on Chlamydiacea detection and typing in various bird species	Email support, training and analysis.

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH 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
Prevalence of Chlamydiaceae in wild birds in Brazil	1 year	To study the prevalence and strain diversity of Chlamydia in birds.	University of Sao Paulo	BRAZIL
Characterisation of Chlamydiifrater strains	2 years	Molecular characterisation of Chlamydiifrater strains from flamingos	Robert Koch Institute Friedrich Schiller University Jena	GERMANY

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:

4

Marti H, Shima K, Boutin S, Rupp J, Clarke IN, Laroucau K, Borel N. Zoonotic and other veterinary chlamydiae - an update, the role of the plasmid and plasmid-mediated transformation. Pathog Dis. 2024 Feb 7;82:ftae030. doi: 10.1093/femspd/ftae030.
Vorimore F, Aaziz R, Al Qaysi L, Wernery U, Borel N, Sachse K, Laroucau K. Detection of a novel genotype of Chlamydia buteonis in falcons from the Emirates. Vet Microbiol. 2024 Apr;291: 110027. doi: 10.1016/j.vetmic.2024.110027.

Herrmann B, Aaziz R, Kaden R, Riedel HM, Spörndly-Nees E, Sandelin LL, Laroucau K. SNP-based high-resolution typing of Chlamydia psittaci from humans and wild birds in Sweden: circulation of the Mat116 genotype reveals the transmission mode to humans. Microbes Infect. 2024 Mar-Apr;26(3):105251. doi: 10.1016/j.micinf.2023.105251.
Le Gall-Ladevèze C, Vollot B, Lèbre L, Aaziz R, Laroucau K, Guérin JL, 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", Veterinary Research: (in press)

b) International conferences:

2
Laroucau K. Recent advances in veterinary research on Chlamydiaceae, Chlam Health Meeting, Ascona (Switzerland), 19-23 February 2024. Invited speaker
Bralet T, Aaziz R, Lejeune M, Clessin A, Galon C, Gamble A, Tornos J Moutailler S, Laroucau K, Boulinier T. Detection of a panel of infectious agents in seabird populations of southernocean islands using a multiple microfluidic PCR tool. 7th International Albatross and Petrel Conference, Coimbra (Portugal), 4-9 September 2024.

c) National conferences:

1
Bralet T, Aaziz R, Lejeune M, Clessin A, Galon C, Gamble A, Tornos J Moutailler S, Laroucau K, Boulinier T. Detection of a panel of infectious agents in seabird populations of southernocean islands using a multiple microfluidic PCR tool. Journées Scientifiques et Doctorales de l'Anses, Maisons-Alfort (France), 2-3 October 2024.

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	Accreditation bu COFRAC	Attestation 1-7341_Rév01.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

Risk assessment for Chlamydia agents is conducted with regular updates. Appropriate risk control measures, including biosecurity and biosafety protocols, are in place. A biological safety officer has been appointed to oversee compliance. Additionally, the Level-3 laboratory undergoes regular official inspections by national authorities to ensure safety and regulatory adherence regarding highly infectious pathogens.

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

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS
Avian chlamydiosis	participant	2	WOAH ref lab from Germany (FLI) WOAH ref lab from 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 the technical			

competence of laboratories in detecting Chlamydia psittaci, C. abortus, and C. pecorum genomic DNA by real-time PCR.	WOAH ref lab from France (Anses) as participant	2 WOAH ref Labs and 37 other Labs	WOAH ref lab from Germany (FLI) as organiser

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?

Yes

Title of the project or contract	Scope	Name(s) of relevant WOAH Reference Laboratories
C. avium diversity and pathogenicity	Diversity and pathogenicity of C. avium	WOAH ref lab from Germany (FLI) WOAH ref lab from France (Anses)
Improvement of C. gallinacea culture	Compare different protocols (cell lines, incubation temperature, ...) for the cultivation of C. gallinacea on cell lines.	WOAH ref lab from France (Anses) WOAH ref lab from Germany (FLI)

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?

No

x

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

Revision of the Avian Chlamydiosis Code Chapter 10.1 and the revision of the Avian Chlamydiosis Chapter (3.3.1) of the WOAH Terrestrial Manual.