

# WOAH Reference Laboratory Reports Activities 2024

This report has been submitted: 23 janvier 2025 11:12

## LABORATORY INFORMATION

<b>*Name of disease (or topic) for which you are a designated WOA Reference Laboratory:</b>	Rabies
<b>*Address of laboratory:</b>	Domaine de Pixérécourt Technopôle Agricole et Vétérinaire - Bâtiment H - 54220 Malzéville Cedex FRANCE
<b>*Tel:</b>	+33 (0)3 83 29 89 50
<b>*E-mail address:</b>	florence.cliquet@anses.fr
<b>Website:</b>	<a href="https://www.anses.fr/fr">https://www.anses.fr/fr</a>
<b>*Name (including Title) of Head of Laboratory (Responsible Official):</b>	Elodie Monchatre Leroy
<b>*Name (including Title and Position) of WOA Reference Expert:</b>	Florence Cliquet
<b>*Which of the following defines your laboratory? Check all that apply:</b>	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
Fluorescent antibody virus neutralisation test (FAVN test)	Yes	548	670
Potency test of inactivated animal vaccines	Yes	30	10
Direct diagnostic tests		Nationally	Internationally

### Florence Cliquet - - FRANCE

Fluorescent antibody test (FAT)	Yes	1080	0
Real time RT-PCR	Yes	8	0
Viral RNA (Real time RT-PCR and RT PCR, N and G genes)	Yes	23	82
G gene and N gene Sequencing	Yes	15	0
Rabies virus titration (titration of oral vaccines)	No	0	25

## TOR2: REFERENCE MATERIAL

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

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 Member Countries
---------------------------	----------------------------	--------------------	---------------------------------------	---	--

3. Did your laboratory supply standard reference reagents (nonWOA-approved) and/or other diagnostic reagents to WOA 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 Member Countries	Country of recipients
Naïve reference serum	Seroneutralisation	Produced	90 mL	297 mL	2	AUSTRIA, BRAZIL, CAMBODIA, FRANCE, GERMANY, ITALY, MADAGASCAR, SPAIN, THAILAND, UNITED KINGDOM,
Challenge virus standard (CVS)	Seroneutralisation	Produced	0	2 mL	0	BRAZIL, CZECH REPUBLIC, PORTUGAL,

4. Did your laboratory produce vaccines?

No

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

No

## TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

No

## TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

No

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

No

## TOR6: EPIZOOLOGICAL DATA

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

Yes

If the answer is yes, please provide details of the data collected:

Data on rabies passive surveillance collected by National Reference Laboratories

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

Yes

If the answer is yes, please provide details of the data collected:

Data on rabies passive surveillance collected by National Reference Laboratories

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:

7

1) Aboulfidaa N, Cliquet F, Robardet E, Darkaoui S, Wasniewski M, Kaiser C, Bobe K, Vos A, Fihri OF. Evaluation of Bait Acceptance and Immune Response in Local Dogs during an Oral Rabies Vaccination Field Study in Morocco. *Trop Med Infect Dis.* 2024 Jun 26;9(7):142. doi:

## Florence Cliquet - - FRANCE

10.3390/tropicalmed9070142. PMID: 39058184; PMCID: PMC11281351.

2) Rupprecht CE, Buchanan T, Cliquet F, King R, Müller T, Yakobson B, Yang DK. A Global Perspective on Oral Vaccination of Wildlife against Rabies. *J Wildl Dis.* 2024 Apr 1;60(2):241-284. doi: 10.7589/JWD-D-23-00078. PMID: 38381612.

3) Crozet G, Cliquet F, Robardet E. What would be the impact on the rabies risk of reducing the waiting period before dogs are imported? A modelling study based on the European Union legislation. *Zoonoses Public Health.* 2024 Jun;71(4):402-415. doi: 10.1111/zph.13113. Epub 2024 Feb 5. PMID: 38317287.

4) Makovska IF, Tsarenko TM, Cliquet F, Dhaka P, Korniienko LY, Tabakovski B, Chantziaras I, Dewulf J. A pilot study on the impact of parenteral vaccination of free-roaming dogs within the rabies control framework in Ukraine. *Regulatory Mechanisms in Biosystems.* 2024 15(1), 177-182. <https://doi.org/10.15421/022426>.

5) Robardet E, Zdravkova A, Ilieva D, Hakmann E, Georgopoulou I, Tasioudi K, Nokireki T, Isomursu M, Jankovic IL, Lojkic I, Serzants M, Zommere Z, Masiulis M, Jaceviciene I, Vuta V, Wasniewski M, Dilaveris D. Retrospective analysis of sero-prevalence and bait uptake estimations in foxes after oral rabies vaccination programmes at European level: Lessons learned and paths forward. *Vet Microbiol.* 2024 Jan;288:109917. doi: 10.1016/j.vetmic.2023.109917. Epub 2023 Nov 25. PMID: 38039917.

6) Golding ME, Wu G, Wilkie R, Picard-Meyer E, Servat A, Marston DA, Aegerter JN, Horton DL, McElhinney LM. Investigating the emergence of a zoonotic virus: phylogenetic analysis of European bat lyssavirus 1 in the UK. *Virus Evol.* 2024 Jul 29;10(1):veae060. doi: 10.1093/ve/veae060. PMID: 39193178; PMCID: PMC11345707.

7) Karunaratne R, Bandara M, Rathnadiwakara H, Cliquet F, Wasniewski M, Thibault J, Rajapaksa R, Dangolla A, Gunatilake M. Determination of immunogenicity following anti-rabies vaccination in elephants (*Elephas maximus maximus*) of Pinnawala Elephant Orphanage, Sri Lanka: A proposal. *Indian Journal of physiology and allied sciences.* 2024 76(03), 75–81.

### b) International conferences:

12

1) Wasniewski M. New Commission Delegated Regulation (EU) 2024/822: what are the new requirements for laboratories to be authorised to carry out rabies serological tests in dogs, cats and ferrets? 15th Workshop for Rabies Vienna, Austria, 5-6 June 2024.

2) Servat A. Rabies passive surveillance in France: a persistent risk of rabies introduction through illegal importation of pets. 15th Workshop for Rabies Vienna, Austria, 5-6 June 2024.

3) Robardet E. Evaluation proficiency test on rabies diagnosis: 2024 results. 15th Workshop for Rabies Vienna, Austria, 5-6 June 2024.

4) Picard-Meyer E. Utilizing Uracil DNA glycosylase for the prevention of carryover contamination in PCR. 15th Workshop for Rabies Vienna, Austria, 5-6 June 2024.

5) Wasniewski M. Rabies serology: New Tools and Challenges. Rabies: sharing international experience to achieve « Zero by 30 » objective Antananarivo, Madagascar, 8-9 October 2024.

6) Robardet E, Servat A. Vaccination of dogs populations against rabies. Workshop on surveillance and control of rabies Harare, Zimbabwe, 2-11 December 2024.

7) Robardet E, Smreczak M, Orłowska A, Malik P, Nándori A, Dirbáková Z, Jerg S, Rudoi O, Polupan I, Groza O, Arseniev S, Barbuceanu F, Vuta V, Picard-Meyer E. Sylvatic Rabies re-emergences in Central Europe. Rabies In The Americas Buenos Aires, Argentina, 3-7 November 2024.

8) Picard-Meyer E, Schereffer JL, Etienne S, Robardet E. Inter-Laboratory Assay: Assessment of the performance of pan-lyssavirus real-time RT-PCR tests in the European Union's National Reference Laboratories. Rabies In The Americas Buenos Aires, Argentina, 3-7 November 2024.

9) Picard-Meyer E, Robardet E, Blanchard Y, Beven V, Hirschaud E, Boué F, Servat A. Bat rabies surveillance: Atypical case of EBLV1 infection in a long distance migrant bat *Pipistrellus nathusii*. Diagnostic tools and disease surveillance. 16th Annual Meeting Epizone Uppsala, Sweden, 25-27 September 2024.

10) Cliquet F. One Health approach to dog-mediated public health risks. Sixth WOA Regional Workshop on Dog Population Management Sutomore, Montenegro, 5 to 7 November 2024.

11) Kirandjiski T, Cliquet F. ADEWB II recommendations for Rabies elimination programme in the Western Balkans. Standing Group of Experts on Rabies for Europe under the GF-TADs umbrella 6th meeting (SGE-RAB6) Brussels, Belgium, 11 July 2024.

## Florence Cliquet - - FRANCE

12) Cliquet F. WOAHSRRAD Rabies Workshop in Qatar - Dog mediated rabies control and elimination, and improvement of dog population management Doha, State of Qatar, 22-23 April 2024.

c) National conferences:

1

1) Servat A, Picard-Meyer E. Surveillance des lyssavirus chez les chauves-souris. Bilan 2022-2023, 20ième Rencontres nationales des chiroptères, Bourges, France, 8-10 mars 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 WOAHS Members?

Yes

a) Technical visit : 4

b) Seminars : 0

c) Hands-on training courses: 0

d) Internships (>1 month) 0

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	CHINESE TAIPEI	2
A	PORTUGAL	1
A	CROATIA	2
A	ALGERIA	2

## TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO 17025 et MJA	pdf	Audit Attestation_EDQM-MJA-195_MJA0124.pdf

19. Is your quality management system accredited?

Yes

**Florence Cliquet - - FRANCE**

Test for which your laboratory is accredited	Accreditation body
Rabies virus neutralisation test (FAVN test)	COFRAC (since Feb 2008)
Rabies diagnosis (FAT)	COFRAC (since Oct 2012)
Rabies diagnosis (RTCIT)	COFRAC (since Oct 2012)
Potency test of rabies inactivated vaccines for veterinary and human use (challenge and serological tests)	EDQM (since March 2008)
Potency test of rabies vaccines (live, oral) for foxes and raccoon dogs	EDQM (since March 2008)
Rabies Real time RT-PCR (SybrGreen)	COFRAC (since March 2020)
Rabies conventional RT-PCR	COFRAC (since March 2020)

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

Yes

Procedures for working with live rabies virus. P3 laboratory facilities Vaccination against rabies and regular serological testing

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

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOA REF. LABS
WOAH RABLAB network	Participating together with other WHOA rabies experts to the goal of Zero human cases mediated by dog rabies by 2030	12	All WOA Ref. labs. for rabies

25. Did you organise or participate in inter-laboratory proficiency tests with WOA 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 WOA Ref. Labs/ organising WOA Ref Lab
Inter-laboratory evaluation on Pan-lyssavirus Q-PCR methods	Coordinator and participant	18	4

**Florence Cliquet - - FRANCE**

for rabies diagnosis			
----------------------	--	--	--

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?

No

## 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 during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons <sup>1</sup>	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Inter-laboratory evaluation on Pan-lyssavirus Q-PCR methods for rabies diagnosis	Coordinator and participant	18	Pan-lyssavirus Q-PCR	FRANCE, GERMANY, ITALY, ROMANIA,

## TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
Technical questions on rabies	On line	International standard serum of dog origin, statement for vaccine quality, international movements of pets, etc...

29. Additional comments regarding your report:

No