

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 25 avril 2023 16:31

Laboratory Information

Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Rabies
Address of laboratory:	Domaine de Pixérécourt Technopôle Agricole et Vétérinaire - Bâtiment H - 54220 Malzéville Cedex FRANCE
Tel.:	+33383298950
E-mail address:	florence.cliquet@anses.fr
Website:	https://www.anses.fr/fr
Name (including Title) of Head of Laboratory (Responsible Official):	Elodie Monchatre-Leroy
Name (including Title and Position) of WOA Reference Expert:	Florence Cliquet
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 WOA Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
Fluorescent antibody virus neutralisation test (FAVN t)	Yes	778	1125
Potency test of inactivated	Yes	22	

animal vaccines			0
Direct diagnostic tests		Nationally	Internationally
Fluorescent antibody test (FAT)	Yes	832	1
Cell culture inoculation test (RTCIT)	Yes	0	1
Viral RNA (Real time RT-PCR and RT PCR, N and G genes)	Yes	14	4
G gene and N gene Sequencing	Yes	9	0
Real time RT-PCR	Yes	14	4
Rabies virus titration (titration of oral vaccines)	Yes	0	20

TOR2: REFERENCE MATERIAL

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

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?H MEMBER COUNTRIES
The WOA?H serum was distributed in Austria, Belgium, Brasilia, Chili, Colombia, Croatia, France, Germany, Italy, Japan, Latvia, Lithuania, Mexico, Morocco, South Korea, Spain, the Netherlands, Sweden, Thailand and USA	Seroneutralisation	produced	10-100mL	100-500mL	

3. Did your laboratory supply standard reference reagents (nonWOA?H-approved) and/or other diagnostic reagents to WOA?H 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?H MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
Naive reference serum	Seroneutralisation	Produced	131 mL	302 mL	13	Africa America Asia and Pacific Europe
Challenge virus standard (CVS)	Seroneutralisation	Produced	0	3 mL	1	Europe

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAHP 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 WOAHP 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?

Yes

NAME OF WOAHP MEMBER COUNTRY SEEKING ASSISTANCE	DATE	WHICH DIAGNOSTIC TEST USED	NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT	NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES
LUXEMBOURG	2022-01-10	FAT, RTCIT and Real Time RT-PCR	1	0

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

Yes

NAME OF THE WOAHP MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
SWEDEN	Rabies diagnosis using Fluorescent Antibody Test	Laboratory training

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

Title of the study	Duration	PURPOSE OF THE STUDY	PARTNERS (INSTITUTIONS)	WOAHP MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY
OIE twinning project	3 years	The main purpose is to improve laboratory capacity for rabies diagnosis and serology	Animal and Health Research Institute of Taipei (Chinese Taipei)	CHINESE TAIPEI

		and for rabies surveillance		
OIE twinning project	3 years	The main purpose is to improve laboratory capacity for rabies diagnosis and serology and for rabies surveillance	Pasteur Institute of Tunis (Tunisia)	TUNISIA

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 passive surveillance of rabies collected by the EU National Reference Laboratories and in several non-EU countries

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 passive surveillance of rabies collected by the EU National Reference Laboratories and in several non-EU countries

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

1/ Crozet G, Rivière J, Rapenne E, Cliquet F, Robardet E, Dufour B. Quantitative risk assessment of rabies being introduced into mainland France through worldwide noncommercial dog and cat movements. *Risk Anal.* 2022 Jun 21. doi: 10.1111/risa.13976. Epub ahead of print. PMID: 35728942.

2/ Wasniewski M, Barrat J, Maiez SB, Kharmachi H, Handous M, Cliquet F. Filter Papers to Collect Blood Samples from Dogs: An Easier Way to Monitor the Mass Vaccination Campaigns against Rabies? *Viruses.* 2022 Mar 29;14(4):711. doi: 10.3390/v14040711. PMID: 35458439; PMCID: PMC9029112.

3/ Arnaout Y, Djelouadji Z, Robardet E, Cappelle J, Cliquet F, Touzalin F, Jimenez G, Hurstel S, Borel C, Picard-Meyer E. Genetic identification of bat species for pathogen surveillance across France. *PLoS One.* 2022 Jan 4;17(1):e0261344. doi: 10.1371/journal.pone.0261344. PMID: 34982782; PMCID: PMC8726466.

4/ Crozet G, Lacoste ML, Rivière J, Robardet E, Cliquet F, Dufour B. Management practices of dog and cat owners in France (pet traveling, animal contact rates and medical monitoring): Impacts on the introduction and the spread of directly transmitted infectious pet diseases. *Transbound Emerg Dis.* 2022 May;69(3):1256-1273. doi: 10.1111/tbed.14088. Epub 2021 Apr 20. PMID: 33787076.

b) International conferences:

10

1/ 13th Workshop for Rabies, 15-16 June 2022, Warsaw, Poland: "Short survey on rabies serology in regards to the Ukrainian situation."
Marine Wasniewski.

2/ 13th Workshop for Rabies, 15-16 June 2022, Warsaw, Poland: "Technical evaluation of two rapid kits for rabies diagnosis."
Alexandre Servat and Emmanuelle Robardet.

3/ XXXIII International Meeting on Rabies in the Americas, 23-28 October 2022, Queretaro, Mexico: "Filter Papers to Collect Blood Samples from Dogs: An Easier Way to Monitor the Mass Vaccination Campaigns against Rabies?"
Marine Wasniewski, Jacques Barrat, Samia Ben Maiez, Habib Kharmachi, Mariem Handous and Florence Cliquet.

4/ XXXIII International Meeting on Rabies in the Americas, 23-28 October 2022, Queretaro, Mexico: "Results on 21 years of enhanced bat rabies surveillance in France."
Alexandre Servat, Florence Cliquet and Evelyne Picard-Meyer.

5/ 3Rs implementation in veterinary vaccine batch-release testing: Current state-of-the-art and future opportunities; Americas/EU Webinar – October 6th, 2022: "Rabies in vitro potency test."
Florence Cliquet and Alexandre Servat

6/ WOAHA Sub – Regional webinar: Towards enhanced rabies control - 28 and 29 September 2022: "Animal rabies surveillance and laboratory diagnosis: Recent development for sustained improvements."
Florence Cliquet

7/ Fourth Meeting of the Standing Group of Experts on Rabies in Europe (SGE RAB4), Brussels, Belgium, 06 July 2022: "Conclusions of the Regional action on animal disease eradication in the Western Balkans" (ADEWB) EUROPEAID/140314/DH/SER/MULTI 2021."
Florence Cliquet and Toni Kirandjiski.

8/ Seminar on rabies control in Egypt, Cairo, 28-29 June 2022: « Rabies surveillance and control in dogs."
Florence Cliquet.

9/ Meeting of WHO CCs/WOAH reference laboratories and experts on rabies, 12-14 December 2022: "Inter-laboratory testing for rabies".
Florence Cliquet.

10/ BTSF STM for Improving the implementation of the rabies eradication programme in Romania, 02-05 May 2022: two presentations: "Planning of oral rabies vaccination: technical approach and implementation"; "Evaluation of oral rabies vaccination".
Florence Cliquet.

c) National conferences:

6

1/ Surveillance de la rage des chauves-souris en France Métropolitaine. Journées CAR CNR, 13 janvier 2022.
Evelyne Picard-Meyer, Emmanuelle Robardet, Nathalie Stroucken, Alexandre Servat et F. Boué.

2/ Surveillance de la rage des chauves-souris en France Métropolitaine. Conférence sur les zoonoses transmises par la faune sauvage, CSFL, Vigy, 19/02/2022.
Evelyne Picard-Meyer, Alexandre Servat, Nathalie Stroucken, Emmanuelle Robardet, Franck Boué.

3/ Closing and Passage Meeting of WOAHA Twinning Project for Rabies between Anses-Nancy and AHRI, 07 November 2022, Taipei

(Taiwan) : "The role of reference laboratory for rabies prevention and control promoted by WOAHP"

Florence Cliquet.

4/ Closing and Passage Meeting of WOAHP Twinning Project for Rabies between Anses-Nancy and AHRI, 07 November 2022, Taipei

(Taiwan) : "The expectation of the development and operation of rabies network in Asia from the perspective of WOAHP/WHO EU reference laboratory."

Florence Cliquet.

5/ Closing and Passage Meeting of WOAHP Twinning Project for Rabies between Anses-Nancy and AHRI, 07 November 2022, Taipei

(Taiwan) : "Experience sharing of the rabies management activities and proficiency test in Europe."

Emmanuelle Robardet.

6/ 7ième journée scientifique sur les maladies animales transfrontalières, 29 septembre 2022, Tunis (Tunisie) : "Strategies to eliminate rabies through vaccination of dogs."

Florence Cliquet.

d) Other (Provide website address or link to appropriate information):

2

1/ Bilan de la surveillance de la rage animale en France : 35 cas détectés de 2017 à 2020. 2022. Bulletin épidémiologique, santé animale et alimentation 97 (1) : 1-11

Servat A., Dacheux L., Picard-Meyer E., Parize P., Robardet E., Rautureau S., Bourhy H., Cliquet

2/ Review of the analysis related to rabies diagnosis and follow up of oral vaccination performed in NRLS in 2021. June 2022.

Robardet E.

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAHP Members?

Yes

a) Technical visit : 2

b) Seminars :

c) Hands-on training courses:

d) Internships (>1 month)

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
Laboratory training for rabies diagnosis (FAT)	Sweden (on site in Uppsala)	1
Laboratory training for rabies diagnosis (RT-PCR)ies	Kazakhstan	1

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 (MJA)		C_fakepath_Audit Attestation_108_MJA0815.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Rabies virus seroneutralisation test (FAVN test)	COFRAC (since February 2008)
Rabies diagnosis (FAT)	COFRAC (since October 2012)
Rabies diagnosis (RTCIT)	COFRAC (since October 2012)
Proficiency test (organisor) for rabies serology	COFRAC (since May2017)
Potency test of rabies inactivated vaccines for veterina y and human use (challenge test and serological test)	EDQM (since March 2008)
Potency test of rabies vaccines (live, oral) for foxes and raccoon dogs	EDQM (since January 2012)
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

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOA H?

No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOA H?

No

TOR10: NETWORK WITH WOA H REFERENCE LABORATORIES

23. Did your laboratory exchange information with other WOA H Reference Laboratories designated for the same pathogen or disease?

Yes

24. Are you a member of a network of WOA H Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOA H REF. LABS/ ORGANISING WOA H REF. LAB.
-------------------------------------	--	------------------	---

25. Did you organise or participate in inter-laboratory proficiency tests with WOA H Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOA H REF. LABS/ ORGANISING WOA H REF. LAB.
Proficiency test for biomarker			

(tetracycline) and age determination	Coordinator	16	1
Proficiency test for rabies diagnosis (Real Time RT-PCR)	Coordinator	25	2

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?

Yes

TITLE OF THE PROJECT OR CONTRACT	SCOPE	NAME(S) OF RELEVANT WOA Reference LABORATORIES
WOAH RABLAB network	To create a network for participating to the goal of Zero human cases mediated by dog rabies by 2030	All 12 WOA rabies ref lab

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?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOA Member Countries
Proficiency test for biomarker (tetracycline) and age determination	Coordinator	16	Europe
Proficiency test for rabies diagnosis (Real Time RT-PCR)	Coordinator	25	Europe

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Elaboration of a procedure for WOA for rabies serology	Anses-Nancy	Writing a procedure in English and in French (Constitution of an internal reference serum for rabies serology)

29. Additional comments regarding your report: