

# WOAH Reference Laboratory Reports Activities 2024

This report has been submitted: 15 janvier 2025 11:02

## LABORATORY INFORMATION

<b>*Name of disease (or topic) for which you are a designated WOA Reference Laboratory:</b>	Rabies
<b>*Address of laboratory:</b>	Animal and Plant Health Agency, Woodham Lane, New Haw, Addlestone Surrey KT15 3NB Weybridge UNITED KINGDOM
<b>*Tel:</b>	+44-208 415.22.38
<b>*E-mail address:</b>	tony.fooks@apha.gov.uk
<b>Website:</b>	www.defra.gov.uk/apha
<b>*Name (including Title) of Head of Laboratory (Responsible Official):</b>	Professor Anthony R. Fooks (PhD) Head of WOA Reference Laboratory (Rabies) and Deputy: Dr Lorraine M. McElhinney (PhD), Head of UK National Rabies Laboratory (Rabies)
<b>*Name (including Title and Position) of WOA Reference Expert:</b>	Professor Anthony R. Fooks (PhD) Head of WOA Reference Laboratory (Rabies)
<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
FAVN	Yes	1717	13478
Direct diagnostic tests		Nationally	Internationally
FAT	Yes	225	0

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RTCIT	Yes	7	0
Real Time Taqman / SYBR RT-PCR	Yes	828	0
Conventional RT-PCR	Yes	10	0

## TOR2: REFERENCE MATERIAL

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

No

3. Did your laboratory supply standard reference reagents (nonWOAH-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
RNA from Lyssavirus phylogroup 1	PCR	Provided	0	11 x 0.02ml	1	GABON,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA?H Members?

Not applicable

## 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?H 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 WOA?H Standards for the designated pathogen or disease?

No

## TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

Name of WOA?H 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
ETHIOPIA	2024-01-08	Real-time RT-PCR	2	0
ETHIOPIA	2024-02-19	Real-time RT-PCR	4	0

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FRANCE	2024-04-23	FAVN	46	0
ETHIOPIA	2024-05-04	Real-time RT-PCR	4	0
FRANCE	2024-11-13	FAVN	46	0

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

Yes

Name of the WOA Member Country receiving a technical consultancy	Purpose	How the advice was provided
GHANA	In-country technical assistance, as part of a UK Official Development Assistance Funded Animal Health Systems Strengthening Project.	Technical assistance.
SIERRA LEONE	In-country technical assistance for the completion phase and final audit as part of a WOA-funded Twinning Project.	Technical assistance.
INDIA	UAR Country Partnership Programme	Technical assistance and coordination.
CHINA (PEOPLE'S REP. OF)	UAR Country Partnership Programme	Technical assistance and coordination.
SOUTH AFRICA	UAR Country Partnership Programme	Technical assistance and coordination.

## TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOA 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
'Understanding global threat of lyssavirus to UK'	4 Years 2024-2028	Lyssavirus surveillance.	2	CHINESE TAIPEI NIGERIA
'Animal Health Systems Strengthening Project'	3-years 2022- 2025	Capability-building in ODA-eligible countries in West & Central Africa.	1	GHANA

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

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:

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APHA have collected surveillance data via passive and active programmes (wild bats, zoo bats) and targeted testing (suspect animals and humans, deaths in quarantine and illegal landings).  
Collaboration with Nigeria to determine the threat of dog meat markets to the spread of rabies.

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:

APHA Test Database (suspect animals, death in quarantine, illegal imports), including positive cases, is reported to UK Government (veterinary & public health departments) and subsequently to WOA (case/incident reports).

Bat submission and test data reported via a publicly accessible Dashboard:

Bat Rabies Dashboard | Tableau Public

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:

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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.

Langguth A, Gibson L, Hopper J, Goharriz H, Chang YM, Cunningham AA, Woodroffe R. Effect of Rabies Booster Vaccination on Antibody Levels in African Wild Dogs (*Lycaon pictus*). *J Wildl Dis.* 2024 Jul 1;60(3):703-713. doi: 10.7589/JWD-D-23-00117. PMID: 38679922.

Bunuma, E.K.; Keyyu, J.; Maziku, J.; Bitanyi, S.; Fyumagwa, R.; Changula, K.; Mubemba, B.; Simulundu, E.; Chitanga, S.; Horton, D.L.; et al. Risk Factors for Human Contact with Bats in Northern Tanzania. *Zoonotic Dis.* 2024, 4, 293-309. <https://doi.org/10.3390/zoonoticdis4040025>

Marino J, Preston EFR, Abute M, Hussein A, Regassa F, Deressa A, Bedin E, Banyard AC, Fooks AR, Sillero-Zubiri C. Concurrent Rabies and Canine Distemper Outbreaks and Infection in Endangered Ethiopian Wolves. *Emerg Infect Dis.* 2024 Dec;30(12):2567-5276. doi: 10.3201/eid3012.240432. PMID: 39592389; PMCID: PMC11616644.

b) International conferences:

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International Symposium on Animal Viruses, Vaccines and Immunity (AVVI 2024) Conference, Bhubaneswar, India [Feb 2024]  
Virtual "Conference on Advancements in Rabies and KFD Research", organized by the Foundation for Neglected Disease Research (FNDR), Bengaluru, India [June 2024]  
18th Vaccine Congress, Lisbon, Portugal [Sept 2024]  
8th World One Health Congress, Cape Town, Republic of South Africa [Sept 2024]

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*United Against Rabies Meeting, Cape Town, Republic of South Africa [Sept 2024]*

*Rabies in the Americas (RITA), Buenos Aires, Argentina [Oct 2024]*

c) National conferences:

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*'Integrative Interventions Across Neglected Tropical Diseases to Support Sustainable Public Health Policy', The University of Surrey, UK [May 2024]*

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

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*EU-funded H2020 'European Virus Archive Global' (EVA-GLOBAL); <https://www.european-virus-archive.com>*

*16th Annual meeting, Uppsala Sweden; <https://www.epizone-eu.net/en/home/am-2024.htm>*

*International Webinar for World Rabies Day, (organised and hosted by APHA); Animal and Plant Health Agency - GOV.UK*

*WOAH Centenary Event, (organised and hosted by APHA); APHA hosts celebration of a century's work - GOV.UK*

## TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

No

## TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
UKAS accredited to BS EN ISO 17025:2005	See attached ISO 17025 certificate.	ISO17025 Certificate.pdf
UKAS accredited to BS EN ISO 9001:2015	See attached ISO 9001 certificate.	ISO 9001 Certificate.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Fluorescent antibody virus neutralisation test (FAVN)	UKAS (ISO17025:2005) / (ISO9001:2015)
Fluorescent antibody test (FAT)	UKAS (ISO17025:2005) / (ISO9001:2015)
Taqman real-time RT-PCR (Real time RT-PCR)	UKAS (ISO17025:2005) / (ISO9001:2015)
SYBR real-time RT-PCR	UKAS (ISO17025:2005) / (ISO9001:2015)
Conventional reverse-transcriptase PCR (RT-PCR)	UKAS (ISO17025:2005) / (ISO9001:2015)
Rabies tissue culture isolation test (RTCIT)	UKAS (ISO17025:2005) / (ISO9001:2015)

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Detection of Rabies Virus Antigen by H&E and IHC

UKAS (ISO17025:2005) / (ISO9001:2015)

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

Yes

APHA maintains a complete and functioning laboratory biological risk management system, which ensures that the laboratory is in compliance with applicable local, national (UK Health and Safety Executive), regional, and international standards and requirements for biosafety and laboratory biosecurity. Rabies is notifiable in the UK Rabies: how to spot and report the disease in animals - GOV.UK (www.gov.uk) Lyssaviruses are handled at the highest level of animal pathogen biosecurity SAPO4 / Schedule 5 The Approved List of biological agents: Advisory Committee on Dangerous Pathogens (hse.gov.uk)

## 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?

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
WOAH Twinning Workshop	2024-06-25	WOAH HQ, Paris, France	Participant	Not applicable
United Against Rabies Meeting	2024-09-22	CapeTown, South Africa	Participant	Not applicable

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

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOA?H REF. LABS
RABLAB / Rabies	Participant	12	FLI (Germany), CDC (USA), ANSES (France), CFIA (Canada), OVI (South Africa), KVI (Israel), APQA (Republic of South Korea), SENASICA (Mexico), CVRI (China), IDAH (Romania), KVAFSU-CVA (India), FAO RL (Italy).
United Against Rabies / WOA?H Country Partnership Programme for Rabies.	Participant	6	KVAFSU-CVA (India), CVRI (China), OVI (South Africa).

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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
VETQAS International rabies serology proficiency scheme (FAVN, RFFIT, ELISA) (every 6 months)	APHA Laboratory Participant / APHA Quality Assurance Unit (Independent VETQAS organiser)	Confidential	Confidential
VETQAS International rabies PCR proficiency scheme (every 6 months)	APHA Laboratory independent Provision of consultancy APHA Quality Assurance Unit VETQAS (organiser)	Confidential	Confidential

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
Understanding the risk of endemic lyssaviruses in the UK	Understanding the prevalence and evolution of European bat lyssavirus type-1 in the UK.	ANSES (France)

## 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
Rabies serology proficiency testing Organised by Kansas State University Rabies Laboratory	Participant	1	FAVN	UNITED KINGDOM, UNITED STATES OF AMERICA,

## TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
		Review of the rabies chapter for the WOA

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Review of WOAHS Standards.	Virtual	Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2024.
Technical assistance.	Virtual	Participation in the WOAHS Rabies Laboratories Network (RABLAB).
Technical assistance.	In person	Participation in the UAR Rabies Meeting.
Technical assistance and planning (following a request from the United Against Rabies / WOAHS HQ, Paris, France).	Virtual	Development of the Country Partnership Programme for Rabies between the following countries: India / Nepal China / Indonesia Republic of South Africa / Malawi

29. Additional comments regarding your report:

Yes

*The Twinning Project [rabies] between UK (APHA) and Sierra Leone (CVL-Teko) was completed and a final report submitted and approved in June 2024.*

*APHA joined the WOAHS Centenary Celebration with a 1-day meeting held in the UK with keynote rabies presentations from Prof Fooks (APHA, UK) and Dr Isloor (KVAFSU-CVA, INDIA).*