

WOAH Reference Laboratory Reports Activities 2024

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LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Rift Valley fever
*Address of laboratory:	Campus International de Baillarguet, TA 15/E, 34398 Montpellier Cedex 5, France
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*Name (including Title) of Head of Laboratory (Responsible Official):	VACHIERY Nathalie
*Name (including Title and Position) of WOA Reference Expert:	CETRE-SOSSAH Catherine
*Which of the following defines your laboratory? Check all that apply:	Research agency

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
ELISA IgG	Yes	0	388
ELISA IgM	Yes	35	109
Direct diagnostic tests		Nationally	Internationally
RTqPCR	Yes	35	388

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
RVF positive Goat serum	ELISA	Produced	0	1 ml	1	EGYPT,
RVF positive Goat serum	ELISA	Produced	0	1 ml	1	INDIA,
RVF negative Goat serum	ELISA	Produced	0	1 ml	1	INDIA,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA?H 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?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
ITALY	2024-09-09	ELISA IgG	15	15
ITALY	2024-09-09	PCR	10	10

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
CHAD	Possibility of collaboration with IRED for capacity building in animal disease diagnostic	Email exchanges
KENYA	Phylogenetic analysis of RVFV	Email exchanges

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
PhD on Epidemiological and socio-economic status of Rift Valley fever (RVF) in Burundi	3 years	Investigate the socio-economic status of Rift Valley fever (RVF) in Burundi	LNV, Bujumbura, Burundi	BURUNDI
PhD on Epidemiological status and risk factors analysis of Rift Valley fever (RVF) in Burkina Faso	3 years	Investigate the epidemiological status of Rift Valley fever (RVF) in a One Health context (human and animal sampling)	Veterinary Services, Burkina Faso	BURKINA FASO
Support LNERV to maintain serology accreditation	Upon request since 2023	Support LNERV to maintain serology accreditation ISO17025 obtained through a training programme	LNERV-ISRA	SENEGAL
RFOROA One health	1 year	Diagnostic support	IRED (Chad), Smithsonian Institute (USA)	CHAD

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

Yes

Research need : 1

Please type the Research need: The organization of inter-laboratory tests is essential for all countries where the disease is circulating or at risk of circulation. This action should be consolidated by specific funding from WOA, which would ensure continuity in carrying out these tests on a regular, long-term basis. Indeed, setting up panels requires a great deal of preparation time, and includes precious reagents from infected areas. All in all, this allows for many useful technical exchanges, and enables us to build up a network of interesting and key partners in the event of a health crisis.

Relevance for WOA Facilitation of international collaboration,

Relevance for the Code or Manual Manual,

Field Diagnostics,

Animal Category Terrestrial,

Disease:

Kind of disease (Zoonosis, Transboundary diseases) Zoonosis, Transboundary diseases,

If any, please specify relevance for Codes or Manual, chapter and title

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

Answer:

Notes:

Answer:

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:

Some epidemiological data from Burundi have been collected by the local veterinarian services, they all belong to Burundi and are not yet internationally available, they will be available when the publication will be accepted

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

1. Becquart P, Bohou Kombila L, Mebaley TN, Paupy C, Garcia D, Nesi N, Olive MM, Vanhomwegen J, Boundenga L, Mombo IM, Piro-Mégry C, Fritz M, Lenguiya LH, Ar Gouilh M, Leroy EM, N'Dilimabaka N, Cêtre-Sossah C and Maganga GD. Evidence for circulation of Rift Valley fever virus in wildlife and domestic animals in a forest environment in Gabon, Central Africa. *PLoS Negl Trop Dis*. 2024 Mar 1;18(3):e0011756. doi: 10.1371/journal.pntd.0011756.

2. Chabert M, Lacôte S, Marianneau P, Confort MP, Aurine N, Pédarrieu A, Doumbia B, Ould Baba Ould Gueya M, Habiboullah H, Beyatt ABEM, Lo MM, Nichols J, Sreenu VB, da Silva Filipe A, Colle MA, Pain B, Cêtre-Sossah C, Arnaud F, Ratniner M. Comparative study of two Rift Valley fever virus field strains originating from Mauritania. *PLoS Negl Trop Dis*. 2024 Dec 9;18(12):e0012728. doi: 10.1371/journal.pntd.0012728. eCollection 2024.

3. Quéllec J, Piro-Mégry C, Cannac M, Nisole S, Marty FH, Gosselet F, Shimizu F, Kanda T, Cêtre-Sossah C, Salinas S. Rift Valley fever virus is able to cross the human blood-brain barrier in vitro by direct infection with no deleterious effects. *J Virol*. 2024 Oct 22;98(10):e0126724. doi: 10.1128/jvi.01267-24.

4. Gardela J, Yautibug K, Talavera S, Vidal E, Cêtre Sossah C, Pagès N and N Busquets. Tissue distribution and transmission of Rift Valley

fever phlebovirus in European *Culex pipiens* and *Aedes albopictus* mosquitoes following intrathoracic inoculation. *Journal of General Virology* 2024; 105:002025. DOI 10.1099/jgv.0.002025.

b) International conferences:

5

1. QUELLEC et al. 2024. Journées Francophones de Virologie (JFV), Bruxelles, Belgique. 10-12 April 2024. Interaction entre le Virus de la fièvre de la vallée du Rift (RVFV) et la barrière hémato-encéphalique humaine : lumière sur un mécanisme potentiel de neuroinvasion.
2. NKUNDWANAYO Canésius et al. 2024. Third joint STVM-AITVM conference, 21-24 May 2024, Montpellier, France. Evidence of RVFV circulation among domestic ruminants in Burundi and risk factors associated.
3. CHEVALIER Laure et al. 2024. Third joint STVM-AITVM conference, 21-24 May 2024, Montpellier, France. Modelling RVF vector population dynamics in a tropical setting in South-Eastern Madagascar.
4. QUELLEC et al. 2024. 44th Annual Meeting American Society of Virology, 24 -28 May, 2024. Ohio State University, Columbus, Ohio, USA. Rift Valley fever virus can cross human blood-brain barrier by direct infection without deleterious effects.
5. CETRE-SOSSAH et al. 2024. Combined Rift Valley Fever, Capripox virus and peste des petits ruminants national reference laboratories workshop 2024. 15-16th October 2024, Montpellier, France. Integrated management of RVF: the case of Mayotte.

c) National conferences:

0

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

0

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit : 15

b) Seminars : 0

c) Hands-on training courses: 2

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	UNITED ARAB EMIRATES	15
C	SAUDI ARABIA	2

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

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Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO17025v2017	Certificate Scan	Full cofrac.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ELISA	COFRAC
PCR	COFRAC

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

Yes

All efforts are being made to work under biosafety level 3 containment facilities in Montpellier and under biosafety level 2 containment under dedicated safe hood cabinet wherever it is available. Personal equipment (dedicated laboratory coat, gloves, masks, glasses) are being used. Senegalese and French rules are followed up. Transport of biological materials considered as infectious substances by air are done according to the international regulation's guidelines developed by the national regulations, ICAO/IATA/CITES* regulations, through an air carrier company from ISRA-LNERV to CIRAD (Montpellier, France) and vice versa. The reference laboratory is used to receive and send infectious animal substances by air and has persons dedicated to the management of these shipments that are fully aware of the relevant regulations and of the proper process (identification, categorization, packaging, marking, labelling, documenting and refrigerating). When the candidate laboratory will intend to send infectious animal samples, contact will be made with the person in charge to make the shipment and written procedures and assistance will be given. Briefly, the IATA dangerous goods regulation indicate for the packaging instruction 602 for the shipment to arrive in good condition and to present no hazard to persons or to animals is the following: the package must include • A inner packaging comprising, watertight primary receptacle, a watertight secondary packaging • A list of the content placed between the secondary and the outer packaging • A rigid outer packaging of adequate strength for its capacity, weight and intended use. A special packaging Division 6.2 Infectious Substances must be used and assigned to UN2814 or UN2900 and the words of "Suspected Category A Infectious substances" must be shown.

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 Laboratory Twinning Programme Evaluation Workshop	2024-06-26	Paris, France	Group discussions	Role of the parent laboratory in a twinning programme: before and after, what could be improved in the future ?

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Towards improved understanding & control of Vector-Borne Diseases in GCC Workshop	2024-07-29	Abu Dhabi, United Arab Emirates	Speaker at different sessions	What are the accurate diagnostic tools to diagnose RVF ? How can we improve the surveillance and be better prepared to avoid RVFV epidemics ?
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TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

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

Yes

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

Not applicable (only WOAHP Reference Laboratory designated for the disease)

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

No

Participation to inter-laboratory proficiency tests organised by the RVF EU Reference Laboratory (which is only EU Reference Laboratory and not RVF WOAHP Reference Laboratory)

26. Did your laboratory collaborate with other WOAHP 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 WOAHP Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAHP Member Countries
Inter-laboratory test comparisons, useful for maintaining COFRAC Accreditation	ORGANIZER	7	Serology IgG	ETHIOPIA, KENYA, MADAGASCAR, MOZAMBIQUE, SENEGAL, UGANDA,
Inter-laboratory test comparisons, useful for maintaining COFRAC Accreditation	ORGANIZER	7	PCR	ETHIOPIA, KENYA, MADAGASCAR, MOZAMBIQUE, SENEGAL, UGANDA,

Inter-laboratory test comparisons, useful for maintaining COFRAC Accreditation	ORGANIZER	28	Serology IgG Austria, Belgium, Bulgaria, Croatia, Cyprus, Chek Republic, Denmark, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lituania, Malta, Mauritania, Montenegro, Netherlands, North Macedonia, Poland, Portugal, Roumania, Senegal, Slovakia, Spain, Senegal, Switzerland, Turkey	AUSTRIA, BELGIUM, BULGARIA, CROATIA, CYPRUS, CZECH REPUBLIC, DENMARK, GERMANY, GREECE, HUNGARY, IRELAND, ITALY, LATVIA, LITHUANIA, MALTA, MAURITANIA, MONTENEGRO, NORTH MACEDONIA (REP. OF), POLAND, PORTUGAL, ROMANIA, SENEGAL, SLOVAKIA, SPAIN, SWITZERLAND, THE NETHERLANDS, TURKEY,
Inter-laboratory test comparisons, useful for maintaining COFRAC Accreditation	ORGANIZER	28	PCR	AUSTRIA, BELGIUM, BULGARIA, CROATIA, CYPRUS, CZECH REPUBLIC, DENMARK, GERMANY, GREECE, HUNGARY, IRELAND, ITALY, LATVIA, LITHUANIA, MALTA, MAURITANIA, MONTENEGRO, NORTH MACEDONIA (REP. OF), POLAND, PORTUGAL, ROMANIA, SENEGAL, SLOVAKIA, SPAIN, SWITZERLAND, THE NETHERLANDS, TURKEY,

TOR12: EXPERT CONSULTANTS

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

29. Additional comments regarding your report:

No