

WOAH Reference Laboratory Reports Activities 2024

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LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Epizootic haemorrhagic disease
*Address of laboratory:	14 rue Pierre et Marie Curie
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Website:	www.anses.fr
*Name (including Title) of Head of Laboratory (Responsible Official):	Stéphan Zientara
*Name (including Title and Position) of WOAH Reference Expert:	Stéphan Zientara
*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 WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
ELISA	Yes	74	15
Seroneutralisation	Yes	15	0
Direct diagnostic tests		Nationally	Internationally
All genotypes rRT-PCR (Viarouge et al, 2015)	Yes	406	210

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Typing rRT-PCR (Viarouge et al, 2015)	Yes	35	0
Virus isolation on KC cells	Yes	65	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
sera	ELISA / seroneutralisation	Produced and provided	0	8 X 1 ml	1	THE NETHERLANDS,
Virus	Virus isolation	Produced and provided	0	1 X 1 ml	1	UNITED KINGDOM,
RNA	rtRT-PCR	Produced and provided	20 X 20 µl	0	1	FRANCE,
Infected blood	rtRT-PCR	Produced and provided	175 X 500 µl	0	1	FRANCE,

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			No. samples received for	No. samples received for
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Country seeking assistance	Date	Which diagnostic test used	provision of diagnostic support	provision of confirmatory diagnoses
SWITZERLAND	2024-06-09	ELISA + seroneutralisation	0	4
SWITZERLAND	2024-07-16	ELISA + seroneutralisation	0	11

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
SWITZERLAND	Serological Diagnosis (cross reaction with an ELISA kit)	By email and phone

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
Orbivirus Circulating in Guadeloupe island	4 months	Detection, Characterization and Sequencing of Orbivirus Circulating in Guadeloupe in 2024	Centre for Research and surveillance on Vector-borne diseases in the Caribbean CIRAD	FRANCE

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:

Surveillance and identification of EHDV strains that circulate in the French overseas territories (French Guiana, Caribbean and Reunion Islands) enrich the epidemiological data on the distribution of the virus in the Indian Ocean and South America.

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:

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Exceptional Bluetongue virus (BTV) and Epizootic hemorrhagic disease virus (EHDV) circulation in France in 2023.

Gondard M, Postic L, Garin E, Turpaud M, Vorimore F, Ngwa-Mbot D, Tran ML, Hoffmann B, Warembourg C, Savini G, Lorusso A, Marcacci M, Felten A, Roux AL, Blanchard Y, Zientara S, Vitour D, Sailleau C, Bréard E. *Virus Res.* 2024 Nov 1;350:199489. doi: 10.1016/j.virusres.2024.199489. Online ahead of print.

PMID: 39471970

End-Point RT-PCR Assays for Detection and Typing of Epizootic Hemorrhagic Disease Virus.

Bréard E, Zientara S, Sailleau C. *Methods Mol Biol.* 2024;2838:185-195. doi: 10.1007/978-1-0716-4035-7_13. PMID: 39126633

Real-Time RT-PCR Assays for Typing of Epizootic Hemorrhagic Disease Virus.

Sailleau C, Zientara S, Bréard E. *Methods Mol Biol.* 2024;2838:163-170. doi: 10.1007/978-1-0716-4035-7_11. PMID: 39126631

Emergence of epizootic hemorrhagic disease in France in 2023: Impacts and future prospects. Zientara S, Sailleau C, Dujardin P, Bréard E, Vitour D. *Virologie (Montrouge).* 2024 Feb 1;28(1):36-38. doi: 10.1684/vir.2024.1034. PMID: 38450666

b) International conferences:

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Zientara. 2024 « Emerging orbiviruses in Europe in 2023 », webinaire Sciensano, 26 mars 2024

Zientara. 2024 "Emergence of orbiviruses in Europe", *Diagnostics for Animals (representative World Federation of the Veterinary Diagnostic Industry)*, webinaire, 23 octobre 2024

Zientara. 2024 MHE : Le virus, sa pathogénie, son mode de transmission, l'épidémiologie générale, la comparaison avec la FCO et autres maladies émergentes », *Journée Formavet, Namur* le 4 septembre 2024

Zientara. 2024 Emergence of arboviruses: some examples », webinar, congrès AETE (The Association of Embryo Technology in Europe), 6 September 2024

c) National conferences:

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Zientara. 2024 « Maladie hémorragique épizootique », conseil scientifique et technique du LNCR, 9 janvier 2024

Zientara. 2024 « Maladies vectorielles émergentes : orbivirus et flavivirus », seconde soirée régionale « Une seule santé », Tours, 4 avril 2024

Zientara. 2024 « Epidémiologie vétérinaire : les maladies vectorielles émergentes », Xème congrès international francophone, Limoges, faculté de droit et de sciences économiques, Université de Limoges, 10-12 juillet 2024

Gondard. 2024 « situation épidémiologique exceptionnelle en France en 2023, intérêt du séquençage de génomes viraux dans un contexte épizootique » Journées francophones de virologie, ULB campus du Solbosch Bruxelles, 10-12 avril 2024.

Zientara. 2024 « Émergences des virus EHDV et BTV-8 en France », webinaire d'Arbo-France, 27 mai 2024.

Zientara. 2024 « Emergence of EHDV/BTV in France/Europe », webinaire de la société européenne d'arbovirologie, 5 juin 2024.

Zientara. 2024 « Situation épidémiologique de la FCO et de la MHE en France et en Europe », journée scientifique ADILVA/RNSPV, Strasbourg, 15 octobre 2024.

Zientara. 2024 « Emergence d'arboviroses en Europe : FCO et MHE », SAPS, webinaire, 21 octobre 2024.

Zientara. 2024 « Situation en France de la FCO et de la MHE », Symposium BI, Lyon, 5 novembre 2024

Zientara.2024 « Rappel sur 30 ans d'émergence de maladies transmises par les culicoïdes », Société Vétérinaire Pratique de France, XII Rencontres de Santé publique vétérinaire, Val-de-Grâce, 4 décembre 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 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)	
ISO 17025	pdf	Portée détaillée accréditation_1-7341.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Detection of viral genome by rtRT-PCR	COFRAC

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

Yes

Strains and sera are stored and manipulated in BSL3 lab which is controlled under biosecurity measures

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?

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
Annual meeting BTV/AHSV Eurl	2024-10-21	Madrid	Speaker (Zientara)	Emergence of Orbiviruses in France
International Bluetongue/EHD workshop	2024-05-21	Woking (UK)	Speaker (Zientara)	Emergence of Orbiviruses in France/Europe over the last 20 years

TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

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

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

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?

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

our lab is the only WOAHP reference lab for EHD

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?

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

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?

No

we have not been approached by any laboratory

TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
review of WOAHP Standards	by mail	WOAHP EHDV chapter

29. Additional comments regarding your report:

Yes

The national health situation with regard to orbiviruses (emergence of BTV-3, spread of EHDV-8 and BTV-8 in France) and the small size of our team meant that we were unable to respond to all international requests.