

OIE Reference Laboratory Reports Activities

Activities in 2019

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Foot and mouth disease
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Name (including Title) of Head of Laboratory (Responsible Official):	Dr BOIREAU Pascal
Name (including Title and Position) of OIE Reference Expert:	Dr Bakkali Kassimi Labib (Adjoint au Dir UMR virologie)
Which of the following defines your laboratory? Check all that apply:	Governmental

ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards

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 OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
ELISA NSP	oui	11	446
ELISA SP	oui	10	377
Séroneutralisation	oui	3	449
Direct diagnostic tests			
Isolement viral	oui	12	31
RT-qPCR	oui	605	73
RT-PCR	oui	/	41
ELISA-Ag	oui	/	22

ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards. To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.

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

No

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
ALGERIA	04/01/2019	4	9
COMOROS	15/04/2019	34	5
MOROCCO	18/01/2019	0	8
MAURITIUS	08/02/2019	341	24
TUNISIA	31/01/2019	0	9

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

No

ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
Field validation of LFD inactivation protocol	18 mois	Validation sur le terrain d'un protocole d'envoi d'échantillons de FA à moindre coût et risque biologique	DTU, NRVI, SAP, UM, BI	DENMARK NIGERIA PAKISTAN THE NETHERLANDS TURKEY

ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:
Circulation du virus O EA-3 au Maghreb et en Afrique de l'Ouest. Introduction du virus O EA-2 aux Comores

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

If the answer is yes, please provide details of the data collected:
Des analyses d'épidémiologie moléculaire relatives aux virus FA isolés ont été réalisées et diffusées

13. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category)

a) Articles published in peer-reviewed journals: 3

Abdel-Aziz Al, Romey A, Relmy A, Gorna K, Laloy E, Métras R, Muñoz F, Blaise-Boisseau S, Zientara S, Lancelot R, Bakkali Kassimi L. Seroprevalence and molecular characterization of foot-and-mouth disease virus in Chad. Vet Med Sci. 2019 Dec 16. doi:10.1002/vms3.206.

Hägglund S, Laloy E, Näslund K, Pfaff F, Eschbaumer M, Romey A, Relmy A, Rikberg A, Svensson A, Huet H, Gorna K, Zühlke D, Riedel K, Beer M, Zientara S, Bakkali-Kassimi L, Blaise-Boisseau S, Valarcher JF. Model of persistent

foot-and-mouth disease virus infection in multilayered cells derived from bovine dorsal soft palate. *Transbound Emerg Dis.* 2019 Aug 16. doi: 10.1111/tbed.13332.

Pfaff F, Hägglund S, Zoli M, Blaise-Boisseau S, Laloy E, Koethe S, Zühlke D, Riedel K, Zientara S, Bakkali-Kassimi L, Valarcher JF, Höper D, Beer M, Eschbaumer M. Proteogenomics Uncovers Critical Elements of Host Response in Bovine Soft Palate Epithelial Cells Following In Vitro Infection with Foot-And-Mouth Disease Virus. *Viruses.* 2019 Jan 12;11(1). pii: E53. doi: 10.3390/v11010053.

b) International conferences: 4

Romey, A., Bakkali Kassimi L, Belsham, G.J., Bulut A.N., Hamers, C., Hudelet, P., Jamal, S., Laloy, E., Relmy, A., Ularanu H.G., Zientara, S. and Blaise-Boisseau S. Rapid, on site, diagnosis of FMD and safe and cost-effective shipment of samples using lateral flow devices for laboratory diagnostic, Epizone, Berlin 26-28 Août 2019

Hägglund S., Laloy E., Näslund K., Pfaff F., Eschbaumer M., Romey A., Relmy A., Rikberg A., Svensson, A., Huet, H., Gorna K., Zühlke D., Riedel, K., Beer M., Zientara S., Bakkali-Kassimi L., Blaise-Boisseau S. and Valarcher J.F. Gene signatures associated with foot-and-mouth disease virus infection and persistence part i: persistent FMDV in long-term multilayer cultures of soft palate cells. EPIZONE, 13ieme congrès, Berlin, 26-28 août 2019

Benfrid S, Blaise-Boisseau S, Wadsworth J, Di Nardo A, Shaw A, Romey A, Relmy A, Fauchoux R, Mioulet V, King DP, Knowles NJ & Bakkali Kassimi L. Molecular epidemiology of Foot-and-Mouth disease virus o/ea-3: a recent transboundary emergence in North Africa (2017-2019). GFRA, 29-31 Octobre Bangkok, Thaïlande

Romey, A., Bakkali Kassimi L, Belsham, G.J., Bulut A.N., Hamers, C., Hudelet, P., Jamal, S., Laloy, E., Relmy, A., Ularanu H.G., Zientara, S. and Blaise-Boisseau S. Rapid, on site, diagnosis of fmd and safe and cost-effective shipment of samples using lateral flow devices for laboratory diagnostic. GFRA, 29-31 Octobre Bangkok, Thaïlande

c) National conferences: 2

Romey, A., Ularanu H.G., Bulut A.N., Jamal, S., Belsham, G.J., Hamers, C., Hudelet, P., Gorna, K., Laloy, E., Relmy, A., Zientara, S., Bakkali Kassimi L, et Blaise-Boisseau S.. Du terrain au laboratoire de référence : évaluation d'un protocole pour l'envoi à faible coût et sans risque infectieux de prélèvements issus de cas suspects de fièvre aphteuse. Journées francophones de virologie, Lyon, 28-29 mars 2019

Laloy E., Hägglund S., Näslund K., Pfaff F., Eschbaumer M., Romey A., Relmy A., Huet, H., Gorna K., Beer M., Zientara S., Bakkali-Kassimi L., Blaise-Boisseau S. and Valarcher J.-F. Un épithélium pluristratifié dérivé du palais mou bovin comme modèle d'infection persistante par le virus de la fièvre aphteuse. JR ENVA, 04 juin 2019, Maisons-Alfort, France.

d) Other:

(Provide website address or link to appropriate information) 2

<https://www.pplateforme-esa.fr>

<https://eurl-fmd.anses.fr>

ToR 7: To provide scientific and technical training for personnel from OIE Member Countries

To recommend the prescribed and alternative tests or vaccines as OIE Standards

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

Yes

a) Technical visits: 1

b) Seminars: 2

c) Hands-on training courses: 1

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	Corée (Rép. de)	8
b	Afrique Centrale et Ouest	28
b	Moyen Orient	31
c	Afrique Centrale et Ouest	13

ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

15. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO17025	PortéeMA_1-2246_190418.pdf

16. Is your quality management system accredited?

Yes

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

17. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?

Yes

(See *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*, Chapter 1.1.4)

ToR 9: To organise and participate in scientific meetings on behalf of the OIE

18. Did your laboratory organise scientific meetings on behalf of the OIE?

No

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
1st Middle East FMD Epidemiology and Laboratory Networks Meeting	26-28 Novembre 2019	Caire	Orateur	An overview of FMD diagnostic tests for PCP stages 1 and 2 Demonstration on use of penside tests
Formation régionale sur l'épidémiologie et le diagnostic de la fièvre aphteuse en réponse à l'apparition du sérotype « O » en Afrique de l'Ouest et Centrale (AOC)	25 - 28 février 2019	Abidjan	Orateur	Diagnostic de laboratoire De la fièvre Aphteuse
2nd West Africa FMD Road Map meeting of the GF-TADs	, 4-6 Septembre 2019	Dakar	Orateur	Du terrain au laboratoire de référence : protocole pour l'envoi à faible coût et sans risque infectieux de prélèvements issus de cas suspects de fièvre aphteuse
8th Regional FMD West Eurasia Roadmap Meeting	4-6 Mars 2019	Shiraz	Orateur	Safe and cost-effective shipment of samples using lateral flow devices for laboratory diagnostic

ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

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

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

Yes

Purpose of the proficiency tests: ¹	Role of your Reference Laboratory (organiser/ participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
Comparaison de deux kits ELISA NSP	Participant	4	<ul style="list-style-type: none"> •UK: The Pirbright Institute (TPI)(Organisateur) • Italy: Istituto Zooprofilattico Sperimentale della Lombardia e dell' Emilia Romagna (IZSLER)(Participant)

¹ validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.

22. Did your laboratory collaborate with other OIE 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 OIE Reference Laboratories
Transcriptovac	Identification des signatures génétiques associées à l'infection aigue et persistance par le virus FA	Sciensano

ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at: <http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing> see point 1.3

Purpose for inter-laboratory test comparisons ¹	No. participating laboratories	Region(s) of participating OIE Member Countries
Contrôle des compétences pour le diagnostic sérologique et virologique de la FA	37	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

ToR 12: To place expert consultants at the disposal of the OIE

24. Did your laboratory place expert consultants at the disposal of the OIE?

No

25. Additional comments regarding your report:

Le laboratoire dispose des capacités nécessaires pour les analyses sérologiques et virologiques du virus de la FA aussi bien pour la confirmation que pour la surveillance. Le laboratoire encourage les pays et les représentants régionaux à le contacter en cas de besoin.