

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:	Foot and mouth disease
*Address of laboratory:	Av. Governador Leonel de Moura Brizola, 7778, São Bento, Duque de Caxias, RJ,, Brazil, CEP 25045-002
*Tel:	+55 21 3661 9064
*E-mail address:	pitucoedv@paho.org
Website:	www.paho.org/en/panaftosa
*Name (including Title) of Head of Laboratory (Responsible Official):	Ottorino Cosivi, Veterinarian, Director Pan American Center for Foot and Mouth Disease - PANAFTOSA-PAHO/WHO
*Name (including Title and Position) of WOA Reference Expert:	Edviges Maristela Pituco, Veterinarian (PhD), Head of Reference Laboratory of Pan American Center for Foot and Mouth Disease - PANAFTOSA-PAHO/WHO
*Which of the following defines your laboratory? Check all that apply:	International Organisation/PANAFTOSA-PAHO/WHO

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 CFL	Yes	0	688
Direct diagnostic tests		Nationally	Internationally
Virus neutralization	Yes	0	5194

TOR2: REFERENCE MATERIAL

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

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 Member Countries
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3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOA 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 Member Countries	Country of recipients
Kit NCPanaftosa ELISA FMD gIII	FMD NSP antibodies detection	produced	non applicable	231 kits	10	ARGENTINA, BOLIVIA, BRAZIL, CHILE, COLOMBIA, ECUADOR, GUYANA, PARAGUAY, URUGUAY, VENEZUELA,
Kit NCPanaftosa EITB	FMD NSP antibodies detection	produced	non applicable	126 kits	8	ARGENTINA, BOLIVIA, BRAZIL, COLOMBIA, ECUADOR, PARAGUAY, URUGUAY, VENEZUELA,
LPBE ELISA (ELISA CFL)	FMD SP antibodies detection	produced	non applicable	202 kits	5	BRAZIL, COLOMBIA, PARAGUAY, URUGUAY, VENEZUELA,
Ag Typing ELISA	FMDV/VSV Antigen Typing	produced	non applicable	20 kits	5	BRAZIL, COLOMBIA, ECUADOR, PARAGUAY, VENEZUELA,
Cell lines	Vaccine production	produced	non applicable	26	3	BRAZIL, PARAGUAY, SAUDI ARABIA,
Reference standard	Molecular biology	produced	non applicable	3	1	PARAGUAY,
Antisera NSP and SP (reference)	Antibody detection	produced	non applicable	4	1	PERU,

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material)						
Hyperimmune serum	Reference standard	produced	non applicable	8	2	COLOMBIA, VENEZUELA,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA 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 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 Standards for the designated pathogen or disease?

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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
BRAZIL	Technical support	Technical support in loco and at distance
BOLIVIA	Technical support	Technical support at distance
PARAGUAY	Technical support / Support in reviewing FMD contingency plans	Technical support at distance
VENEZUELA	Technical support	Technical support at distance
COLOMBIA	Technical support	Technical support at distance
ECUADOR	Technical support	Technical support at distance
PERU	Technical support	Technical support at distance
PANAMA	Technical support / Support in reviewing FMD contingency plans	Technical support in loco and at distance
GUYANA	Technical support / Support in reviewing FMD contingency plans	Technical support at distance
SURINAME	Technical support	Technical support at distance
CHILE	Technical support / Support in	Technical support in loco.

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	reviewing FMD contingency plans	
HONDURAS	Support in reviewing FMD contingency plans	Technical support at distance
GUATEMALA	Support in reviewing FMD contingency plans	Technical support at distance

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
Post-vaccination immune response monitoring.	5 years	Post-vaccination monitoring. Percentage expectation of protection against foot-and-mouth disease virus in systematically vaccinated cattle herds in Brazil	Biological Institute of São Paulo - IBSP Ministry of Agriculture and Livestock	BRAZIL
Production of reference serum panels for vaccine matching studies using bivalent vaccines with serotypes O1 Campos and A24 Cruzeiro.	5 years	Produce larger volumes of postvaccination sera to be supplied to laboratories for use as reference sera (routine vaccine control and vaccine matching)	Biological Institute of São Paulo-IBSP Ministry of Agriculture and Livestock	BRAZIL
Potency testing of monovalent vaccines: studies to support BANVACO and production of a reference serum panel (serotypes O1 Campos and A24 Cruzeiro).	3 years	Generating information to facilitate decisions. Establish a strategy for use in the event of a animal health emergency in the South American region.	Ministry of Agriculture and Livestock	BRAZIL
Inactivation of foot-and-mouth disease virus using commercial lysis buffers.	3 years	Evaluate the efficacy of buffers in the inactivation of foot-and-mouth disease virus (FMDV).	Ministry of Agriculture and Livestock	BRAZIL
Validation of commercial rapid tests (lateral flow device) for the detection of FMD.	3 years	Check the sensitivity of the rapid tests available on the market.	Ministry of Agriculture and Livestock	BRAZIL
Development of a rapid test (lateral flow device)	3 years	In vesicular disease investigations, using rapid field tests to rule out (or confirm) foot-and-mouth disease is an important tool for agility required at	Ministry of Agriculture	BRAZIL

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for detecting foot-and-mouth disease.		the current stage of eradicating the disease in the Americas. The objective is developing a new test to respond to field demands.	and Livestock	
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13. In exercising your activities, have you identified any regulatory research needs* relevant for WOA?H?

Yes

Research need : 1

Please type the Research need: Development and validation of Lateral Flow Device tests for foot-and-mouth disease field research.

Relevance for WOA?H Other,

Relevance for the Code or Manual Manual,

Field Epidemiology and Surveillance,

Animal Category Terrestrial,

Disease:

Foot and mouth disease

Kind of disease (Zoonosis, Transboundary diseases) 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: CHAPTER 3.1.8. FOOT AND MOUTH DISEASE (INFECTION WITH FOOT AND MOUTH DISEASE VIRUS)

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:

Panaftosa continuously collects epizootiological data from countries in the region to carry out epidemiological analyses that will guide future actions against foot-and-mouth disease under each country's Action Plan. Every year, Panaftosa consolidates epidemiological data from the 13 members countries da Cosalfa (South American Commission for the Fight Against Foot-and-Mouth Disease) - Argentina, Brazil, Bolivia, Chile, Colombia, Ecuador, Guyana, Panama, Paraguay, Peru, Suriname, Venezuela, and Uruguay - and present it at the annual meeting, the report of which is published in IRIS.

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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:

All epidemiological data on foot-and-mouth disease is published on the PAHO website (IRIS-PAHO - <https://iris.paho.org/>).
Example: COSALFA 49 - 2023. <https://iris.paho.org/discover?scope=%2F&query=cosalfa+49&submit=>
Cosalfa 50 awaiting publication.

Beyond this, PANAFTOSA disseminates its knowledge through a catalog of publications. The main objective of this catalog is the preservation and dissemination of the technical-scientific memory of the Organization, through the collection and organization of the works officially published by PANAFTOSA/SPV and its professionals since its creation in 1951.

PANAFTOSA/SPV-PAHO/WHO selects and makes available in the catalog: documents, publications, scientific articles, events, virtual transmissions, and monographs carried out in the institutional and scientific environment.

It is important to note that some records allow electronic access and are available in full text, while others are with their respective references.

Link catalog of publications (1951-2023): <https://iris.paho.org/handle/10665.2/60937>

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:

b) International conferences:

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SIMULATION EXERCISES FMD EMERGENCY

1. *Cruzeiro do Sul, AC Brazil, September 12th to 18th, 2024*

The exercise's objective was to test response procedures in the event of an introduction of foot-and-mouth disease in Brazil.

Validate and enhance preparedness and response plans, procedures and systems.

Preparedness countries in the region to respond to the foot-and-mouth emergency, identify gaps prior to a real incident and update contingency plans.

It was attended by 180 animal health officials from Brazil, as well as officials from the security forces and members of Bolivia's Servicio Nacional de Sanidad Agropecuaria e Inocuidad Alimentaria (SENASAG) and Peru's Servicio Nacional de Sanidad Agraria (SENASA). The exercise was carried out in collaboration with the Acre Institute for Agricultural and Forestry Defense (IDAF-AC).

INTERNATIONAL SEMINAR PRE-COSALFA 50: Getting Close to Regional Eradication: Half a Century of Progress - PRE-COSALFA 50 SEMINAR (2024):

- Pan American Center for Foot-and-Mouth Disease and Veterinary Public Health of the Pan American Health Organization/World Health Organization (PANAFTOSA/VPH PAHO/WHO). PRE-COSALFA 50 - Getting close to Regional Eradication: half a century of progress. Conference agenda and data are published at: <https://iris.paho.org/handle/10665.2/60648>

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50ª REUNIÓN ORDINARIA DE LA COMISIÓN SUDAMERICANA PARA LA LUCHA CONTRA LA FIEBRE AFTOSA - COSALFA 50 (2024):

- Pan American Center for Foot-and-Mouth Disease and Veterinary Public Health of the Pan American Health Organization/World Health Organization (PANAFTOSA/VPH-PAHO/WHO). COSALFA 50. Status Report on the FMD Eradication Programs in South America and Panama in 2022 and 2023. Available at: https://www.paho.org/sites/default/files/informe_situacion-fa-2022-2023-final_0.pdf

- Pan American Center for Foot-and-Mouth Disease and Veterinary Public Health of the Pan American Health Organization/World Health Organization (PANAFTOSA/VPH PAHO/WHO). Historical Summary of the South American Commission for the Fight Against Foot-and-Mouth Disease (COSALFA) 1973–2022: COSALFA 50. PANAFTOSA/SPV – OPS/OMS. 2024. P.156. Available at: <https://iris.paho.org/handle/10665.2/59503>

- Pan American Center for Foot-and-Mouth Disease and Veterinary Public Health of the Pan American Health Organization/World Health Organization (PANAFTOSA/VPH-PAHO/WHO). COSALFA 50. Report of the Ex Officio Secretariat for the 50th Meeting of the South American Commission for the fight against Foot-and-Mouth Disease (COSALFA). Available at: <https://iris.paho.org/handle/10665.2/59562>

- Pan American Center for Foot-and-Mouth Disease and Veterinary Public Health of the Pan American Health Organization/World Health Organization (PANAFTOSA/VPH-PAHO/WHO). COSALFA 50. Resolutions of the 50th COSALFA (Rio de Janeiro, Brazil - April 25 - 26, 2024). Available at: <https://iris.paho.org/handle/10665.2/59572>

- Pan American Center for Foot-and-Mouth Disease and Veterinary Public Health of the Pan American Health Organization/World Health Organization (PANAFTOSA/VPH PAHO/WHO). Biennial Plan 2024-2025 for strengthening technical cooperation from PANAFTOSA towards the consolidation of the Hemispheric Program for the Eradication of Foot-and-Mouth Disease (PHEFA). Available at: <https://iris.paho.org/handle/10665.2/59564>

c) National conferences:

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

1

Preparation and publication of a virtual course on foot-and-mouth disease in English, Spanish and Portuguese - more than 2000 participants attended the course in 3 months.

Link - <https://portalpanaftosa.org/en/course/view.php?id=1939>

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit : 0

b) Seminars : 0

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c) Hands-on training courses: 122

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
C	VENEZUELA	1
C	PARAGUAY	1
C	BRAZIL	40
C	BRAZIL	50
C	BRAZIL	30

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ABNT NBR ISO/IEC 17025:2017 - General requirements for the competence of testing and calibration laboratories	Certificado ABNT NBR ISO/IEC 17025:2017	CERTIFICADO ACREDITAÇÃO_CRL 1309 PANAFTOSA 28-06-21.pdf
ABNT NBR ISO 17034:2017 - General requirements for the competence of reference material producers	Certificado ABNT NBR ISO 17034:2017	CERTIFICADO CGCRE.INMETRO PMR 0015-PANAFTOSA_.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
I-ELISA 3ABC	CGCRE/INMETRO - Brazil - ABNT NBR ISO/IEC 17025:2017
ELISA 3ABC (block)	CGCRE/INMETRO - Brazil - ABNT NBR ISO/IEC 17025:2017
EITB	CGCRE/INMETRO - Brazil - ABNT NBR ISO/IEC 17025:2017
ELISA CFL O, A and C	CGCRE/INMETRO - Brazil - ABNT NBR ISO/IEC 17025:2017
Typing ELISA	CGCRE/INMETRO - Brazil - ABNT NBR ISO/IEC 17025:2017
Virus neutralization	CGCRE/INMETRO - Brazil - ABNT NBR ISO/IEC 17025:2017
FMD RT-PCR	CGCRE/INMETRO - Brazil - ABNT NBR ISO/IEC 17025:2017
FMD RT-qPCR	CGCRE/INMETRO - Brazil - ABNT NBR ISO/IEC 17025:2017
Certified Reference Material (CRM) of positive standard serum for Foot and Mouth Disease - kit ELISA FMD gIII	CGCRE/INMETRO - Brazil - ABNT NBR ISO 17034:2017
Certified Reference Material (CRM) of positive standard serum for Foot and Mouth Disease - kit EITB	CGCRE/INMETRO - Brazil - ABNT NBR ISO 17034:2017

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

Yes

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The laboratory follows procedures to identify, map, control, monitor, and mitigate possible risks that may affect its activities. Risks are identified by area and classified in relation to priority and impact, and treated according to the classification in which they were placed.

TOR9: SCIENTIFIC MEETINGS

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

Yes

National/ International	Title of event	Co-organiser	Date	location	No. Participants
International	Meeting of animal health laboratories of the countries of the South American Commission for the Fight Against Foot-and-Mouth Disease (COSALFA) - Coordinated by Reference Laboratory of Panaftosa.	-	2024-12-10	Rio de Janeiro	30

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
27th Conference of the Regional Commission for the Americas	2024-11-25	Ecuador	Roundtable discussion	-
19th Annual Meeting OIE/FAO Reference Laboratories	2024-09-24	Rome, Italy	Speaker	Panaftosa Laboratory Activities in 2024 - Pool 7: South America

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
			- WOA?H Reference Laboratory for FMD, Dirección de Laboratorio Animal, SENASA, Argentina - WOA?H collaborating

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<p>19th Annual Meeting OIE/FAO Reference Laboratories</p>	<p>Speaker</p>	<p>29</p>	<p>Centre for validation, quality assessment and quality control of diagnostic assays and vaccine testing for vesicular diseases in Europe, and FAO Reference Centre for Vesicular Diseases - Sciensano, Belgium - WOAHO Reference Laboratory for FMD - Botswana Vaccine Institute (BVI), Botswana - Centro Panamericano de Fiebre Aftosa (PANAFTOSA) and PAHO /WOAH Reference Laboratory for FMD - WOAHO/FAO FMD Reference Laboratory, National Centre for Foreign Animal Disease National Centres for Animal Disease, Canadian Food Inspection Agency, Canada - WOAHO and China National FMD Reference Laboratory, Lanzhou Veterinary Research Institute (LVRI), CAAS, People's Republic of China - WOAHO/FAO FMD Reference Laboratory, French Agency for Food, Environmental and Occupational Health & Safety (ANSES), France - FAO Reference Centre for FMD in South Asia, Indian Council for Agricultural Research, National Institute of FMD (NIFMD), Bhubaneswar, India - WOAHO/FAO FMD Reference Laboratory, Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna (IZSLER), Italy - WOAHO Reference laboratory for FMD, Animal and Plant Quarantine Agency (APQA), Republic of Korea - FAO FMD Reference Laboratory, Wageningen Bioveterinary Research, The Netherlands - FAO Reference Centre for FMD for Central Asia and West Eurasia and WOAHO Reference Laboratory for FMD, Federal Governmental Institute, Centre for Animal Health (FGI</p>
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		ARRIAH), Russian Federation - FAO Reference Laboratory for FMD in Africa and WOAHA FMD Reference Laboratory, Transboundary Animal Diseases Programme, ARC-Onderstepoort Veterinary Institute (ARC-OVI), South Africa - Department of Livestock Development, Pakchong, Thailand - FAO World Reference Laboratory (WRLFMD) and WOAHA Reference Laboratory for FMD - The Pirbright Institute, United Kingdom - WOAHA FMD Reference Laboratory, Foreign Animal Disease Diagnostic Lab, Plum Island Animal Disease Center (PIADC), United States of America
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25. Did you organise or participate in inter-laboratory proficiency tests with WOAHA 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 WOAHA Ref. Labs/ organising WOAHA Ref Lab
FMD antigen detection test	participant	44	Organized by The Pirbright Institute/UK
FMD molecular biology test	participant	44	Organized by The Pirbright Institute/UK
FMD NSP antibody detection test	participant	46	Organized by The Pirbright Institute/UK
FMD SP antibody detection test	participant	31	Organized by The Pirbright Institute/UK
FMD antigen detection test	organiser	15	APHIS (USA), SENASA (Argentina), NCFAD (Canada)
FMD molecular biology test	organiser	15	APHIS (USA), SENASA (Argentina), NCFAD (Canada)
FMD NSP antibody detection test	organiser	22	APHIS (USA), SENASA (Argentina), NCFAD (Canada)
FMD SP antibody detection test	organiser	12	APHIS (USA), SENASA (Argentina), NCFAD (Canada)

26. Did your laboratory collaborate with other WOAHA Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

Yes

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Title of the project or contract	Scope	Name(s) of relevant WOA Reference Laboratories
Regionally relevant reference FMDV antigens for post vaccination studies	To establish reference antigens for each of the Asian and African FMD endemic pools to help to standardize PVM testing.	- The Pirbright Institute, Woking, UK - Istituto Zooprofilattico Sperimentale della Lombardia E dell'Emilia Romagna (IZSLER), Brescia, Italy - Centro Panamericano de Fiebre Aftosa (PANAFTOSA), Rio de Janeiro, Brazil - ARC-OVR Transboundary Animal Diseases, Onderstepoort, South Africa - Wageningen Bioveterinary Research (WBVR), Lelystad, The Netherlands - Food and Agriculture Organisation of the United Nations, Rome, Italy - The European Commission for the Control for Foot-and-Mouth Disease, Rome, Italy

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 ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Evaluate the performance of the FMD gIII ELISA kit, produced by Panaftosa - WOA Reference Laboratories	organizer	7	Interlaboratorial Comparison for detection of non-structural protein using the kit ELISA FMD gIII (3ABC FMD)	ARGENTINA, CANADA, FRANCE, ITALY, RUSSIA, UNITED KINGDOM, UNITED STATES OF AMERICA,
Evaluate the performance of the FMD gIII ELISA kit, produced by Panaftosa - National Reference Laboratories and WOA Reference Laboratories from Americas	organizer	23	Interlaboratorial Comparison for detection of non-structural protein using the kit ELISA FMD gIII (3ABC FMD)	ARGENTINA, BRAZIL, CANADA,

TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
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Advisor	Paris	Evaluation of requests for maintenance or change of sanitary status
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29. Additional comments regarding your report:

No