OIE Reference Laboratory Reports Activities

Activities in 2019

This report has been submitted : 2020-01-15 11:10:17

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Classical swine fever
Address of laboratory:	Institut de Recerca i Tecnologia Agroalimentàries (IRTA) Centre de Recerca en Sanitat Animal (CReSA) Edifici CReSA Campus de la Universidad Autónoma de Barcelona Bellaterra 08193 (Barcelona) SPAIN
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Website:	http://www.cresa.cat/cresa3/default.asp
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Josep Usall, General Director at IRTA
Name (including Title and Position) of OIE Reference Expert:	Dr. Lilianne Ganges, Research Leader, Exotic Diseases Subprogram Head of the CSF OIE Reference laboratory in IRTA-CReSA
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	
Indirect diagnostic tests		Nationally	Internationally
Seroneutralization (NPLA Test)	Yes	370	0
ELISA: Classical Swine Fever Virus (CSFV) Antibody Test Kit (IDEXX)	Yes	349	
Direct diagnostic tests		Nationally	Internationally
Rt-qPCR (Hoffmann et al., 2005)	Yes	1773	
viral isolation test	Yes	50	
Conventional RT-PCR for Pestivirus detection	Yes	10	

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?

No

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

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
ECUADOR	Consultation for CSFV diagnosis by ELISA, NPLA and virus isolation	Remote (email exchange)
ECUADOR	Consultations on testing for CSF vaccine potency test	Remote (email exchange)
ARGENTINA	Technical consultation to optimize the RT-qPCR test for CSFV diagnosis	Remote (email exchange)
ARGENTINA	Consultation for CSFV and ASFV diagnosis in porcine semen samples	Remote (email exchange)
COLOMBIA	Consultation on how to organize and harmonize the CSF diagnosis in the country considering the different areas (CSF free or not): Technical consultation for diagnosis and vaccine potency test	Visit in loco (ICA, Bogotá)
CUBA	Consultation on how to organize the CSF diagnosis in the country: Technical consultation for diagnosis, control and vaccine potency test	Visit in loco
CHINA (PEOPLE'S REP. OF)	Consultation on CSF diagnosis, molecular epidemiology and CSF vaccine eficacy studies	Visit in loco
CHINESE TAIPEI	Consultation on CSF diagnosis and control, strategy design to detect subclinical forms of CSF, molecular epidemiology of CSFV and and design of strategic research for CSFV	Visit in loco
JAPAN	Consultation for CSFV diagnosis in porcine semen samples and Technical consultation to optimize the RT-qPCR test for CSFV and ASFV diagnosis	Remote (email exchange)
KOREA (REP. OF)	Consultation on CSF vaccine eficacy studies: pathogenesis and immune response studies of CSFV	Visit in loco

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
CSFV virulent factors	2017-2022	Update on CSFV pathogenesis for disease control	Institute of Virology and Immunologys	SWITZERLAND
CSFV Diagnosis, pathogenesis and evolution studies	2017-2022	study of CSFV variants circulating in endemic situation under vaccination	CENSA, Cuba -Institute of VeterinaryMedicine, Cuba - IRTA-CReSA, Spain	CUBA
European Researchgroup: EPIZONE	So far, indefinite	Strengthen the cooperation between National and International Reference Laboratories in the field of Epizootic diseases. -facilitate and coordinate scientific research applied to "Epizootic Disease Diagnosis and Control" -develop and support strategies for durable cooperation,particularly to inform about opportunities for further funding -develop,share and upgrade common research tools and platforms for joint research projects -develop common research methods,standardsand protocols-share data and information among partners and better facilitate public access to selected information on epizootic diseases	-L'Agence nationale chargée de lasécurité sanitaire de l'alimentation, del'environnement et du travail(ANSES),France -Animal and Plant Health Agency(APHA), UK -Centre de Recerca en SanitatAnimal (IRTA-CReSA), Spain - WageningenBioveterinaryResearch(WBVR),Netehrland -TechnicalUniversity of Denmark, NationalVeterinary Institute (DTU Vet), Denmark -Friedrich-Loeffler-Institute(FLI),Germany -Institute for Animal Health (IAH) UK -Institute of Virology and Immunology(IVI), Switzerland -Instituto ZooprofilatticoSperimentale della Lombardia e dell'Emillia Romagna Brescia(IZSLER), Italy -Instituto Zooprofilattico Sperimentaledelle Venezie (IZS-Ve), Italy -NationalResearch Institute of Veterinary Virologyand Microbiology (NRIVVaMR), Russia -National Veterinary Research Institute(NVRI), Poland - StatensVeterinarmedicinska Anstalt (SVA),Sweden - Veterinary and AgrochemicalResearch centre, VAR-CODA-CERVA(VAR), Belgium -Emerging PathogensInstitute, University of Florida (EPI), USA	
CSFV host interaction	3 years	Update in CSFV host interaction	-NIH/NIEHS, USA -IRTA-CReSA, Spain	UNITED STATES OF AMERICA
CSFV research	3 years	development of tools to improve the control	USDA, USA and IRTA-CReSA	UNITED STATES OF AMERICA
Efficacy of Cp7 E2 Alfort vaccine against CSF persistent infection	1 year	Vaccination derived maternal antibodies can prevent postnatal classical swine fever virus persistence in suckling pigs	Friedrich-Loeffler-Institut	GERMANY

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:
CSF outbreak study in some endemic areas. Isolation of CSFV strains of different virulence levels, sequencing and analysis of sequence data and phylogeny of the isolated circulating strains. Pathogenesis studies of circulating CSF strains in endemic areas. Immunological studies and strain characterization. Determination of immunosuppression levels in the porcine immune system after infection with CSFV: determination of which cell population modulates immunosuppression and promotes viral replication. Genome sequence determination that are involved in the virulence of the virus. Vaccine efficacy studies in certain epidemiological circumstances, mechanisms and factors that may influence the efficacy of vaccines in the field

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:
-Detection of chronic and persistent classical swine fever infections under field conditions and under vaccination -Determination of the Low CD4/CD8 ratio in the blood of classical swine fever postnatal persistent infected pigs at 3 weeks after birth - Identification of an Immunosuppressive Cell Population during Classical Swine Fever Virus Infection, These cells are responsible for maintaining immunosuppression status after infection with the virus and delay or prevent the generation of antibodies -A poly-uridine insertion in the 3'-untranslated region of classical swine fever virus genome -It reduces the virulence of the virus, as well as its ability to replicate. This finding has been obtained after recovering and characterizing a field isolate which proved to generate a low pathogenic infection form.

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: 4
-Bohórquez JA, Wang M, Pérez-Simó M, Vidal E, Rosell R, Ganges L.
Low CD4/CD8 ratio in classical swine fever postnatal persistent infection generated at 3 weeks after birth.
Transbound Emerg Dis. 2019 Mar;66(2):752-762. doi:10.1111/tbed.13

-Coronado L, Bohórquez JA, Muñoz-González S, Perez LJ, Rosell R, Fonseca O, Delgado L, Perera CL, Frías MT, Ganges L.
Investigation of chronic and persistent classical swine fever infections under field conditions and their impact on vaccine efficacy.
BMC Vet Res. 2019 Jul 15;15(1):247. doi: 10.1186/s12917-019-1982-x.

-Bohorquez JA, Muñoz-González S, Pérez-Simó M, Revilla C, Domínguez J, Ganges L.
Identification of an Immunosuppressive Cell Population during Classical Swine Fever Virus Infection and Its Role in Viral Persistence in the Host.
Viruses. 2019 Sep 4;11(9). pii: E822. doi: 10.3390/v11090822

-Wang M, Liniger M, Muñoz-González S, Bohórquez JA, Hinojosa Y, Gerber M, López-Soria S, Rosell R, Ruggli N, Ganges L.
A poly-uridine insertion in the 3'-untranslated region of classical swine fever virus activates immunity and reduces viral virulence in piglets.
J Virol. 2019 Oct 23. pii: JVI.01214-19. doi: 10.1128/JVI.01214-19.

b) International conferences: 12
-Jose Alejandro Bohorquez, Sara Muñoz-González, Marta Perez-Simó , Raquel Maeso, Concepción Revilla, Javier Dominguez, Llilianne Ganges .
Identification of an immunosuppressive cell population associated with viral persistence: the classical swine fever model.
Oral communication, XV congreso de virología de la Sociedad Española de Virologia. 11th meeting of the Global Virus Network. 9-12 of June 2019, Barcelona, Spain.

-LLilianne Ganges. Pathogenesis studies of classical swine fever virus: Applications for diagnosis and control. Plenary Lecture, African and Classical Swine Fever European references laboratories Workshop 2019, June 2019, Madrid

-José Alejandro Bohórquez, Miaomiao Wang, Marta Pérez-Simó, Enric Vidal, Rosa Rosell, Llilianne Ganges
Immunological mechanisms underlying classical swine fever persistent infection
Oral communication, 13th EPIZONE Annual Meeting. 26-28 August 2019, Berlin, Germany

-Miaomiao Wang, Matthias Liniger, Sara Muñoz-González, Jose Alejandro Bohórquez, Markus Gerber, Rosa Rosell, Yohandri Hinojosa, Nicolas Ruggli, Llilianne Ganges
A poly-uridine insertion in the 3'-untranslated region found in a classical swine fever low virulent strain modulates virulence
Oral communication, 13th EPIZONE Annual Meeting. 26-28 August 2019, Berlin, Germany

-Katarzyna Stępniewska, José Alejandro Bohórquez, Miaomiao Wang, Alejandro Soler, Rosa Rosell, Carmina Gallardo, Katarzyna Podgórska, Llilianne Ganges
Immunopathogenesis and diagnosis of African and Classical swine fever virus co-infections in domestic pigs
Oral communication, 13th EPIZONE Annual Meeting. 26-28 August 2019, Berlin, Germany

-Julia Henke, Sandra Blome, Laura Zani, Llilianne Ganges, Dewi Murni Alfa, Martin Beer, Sandra Juanola, Alicia Urniza
Vaccination derived maternal antibodies can prevent postnatal classical swine fever virus persistence in suckling pigs
Poster, 13th EPIZONE Annual Meeting. 26-28 August 2019, Berlin, Germany

-LLilianne Ganges, Wendy González. Classical Swine Fever diagnostic and research.
Oral communication in 14th CaribVET Steering Committee Meeting Future of Animal & Veterinary Public Health in the Caribbean, May 2019.

-Llilianne Ganges. Pathogenie of classical swine fever virus, lessons learned in the last 20 years and its applications in diagnosis and control
Plenary Lecture
III Seminario Internacional de Sanidad Agropecuaria (SISA 2019)/ 3rd International Seminar on Animal and Plant Health (SISA 2019)
May 2019 “Melia Marina” Conventions Center Varadero, Cuba/ “Melia Marina” Conventions Center Varadero, Cuba

-Llilianne Ganges. La investigación como piedra angular del laboratorio de referencia de la OIE en PPC: Estudios de patogenia de PPC y PPA
Plenary Lecture
Porkacalidad 2019, Junio, Bogotá, Colombia

-Llilianne Ganges, Research in Classical Swine Fever Immunopathogenesis: Applications for diagnosis and control.
Plenary Lecture
2019 international symposium of Classical Swine Fever. October 24-25, 2019. Beijing, China

-Llilianne Ganges, Research in Classical Swine Fever: Applications for Diagnosis and Control
Plenary Lecture
November, 2019 Taipei, Taiwan, China

-Llilianne Ganges
Research in Classical Swine Fever: Applications for Diagnosis and Control
Plenary Lecture
November 2019, Pohang University of Technology, South Korea

c) National conferences: 2
a-) Organization of the workshop: Evolution of African swine fever
Organizer Llilianne Ganges
Technical Conference (PATT) for veterinarians in Catalonia
UAB, Septiembre de 2019:
-La Peste Porcina Africana (PPA). El papel de la Organización Internacional de Epizootias (OIE).Llilianne Ganges
-El diagnóstico de la PPA y su diferencial con PPC y otras enferemdades, Rosa Rosell
-Estrategias de vigilancia ante la PPA, Anna Alba

-Actuaciones del DARP para la prevención y vigilancia de la PPA, Mercè Soler
-Seguimiento y control sanitario del jabalí, Roser Velarde
-SESC: Servicio de apoyo a mataderos. Aplicación a la vigilancia de PPA y PPC en mataderos y establecimientos de manipulación de caza, Enrique Vidal, IRTA-CReSA.
-Aspectos prácticos en bioseguridad. Experiencias de profesionales del sector frente a la PPA, Carmen Alonso
-Una vacuna eficaz contra la PPA: llegaremos?, Francesc Ascensi, IRTA-CReSA

b-) Conference on Emerging Diseases of the Network of High Biological Safety Laboratories in Spain RLASB September 30, Animal Health Research Center (INIA-CISA) of Valdeolmos, Madrid
-Fernando Rodríguez: the ICTS network: RLASB_ICTS and the main activities of the node
-Marisa Arias: the most relevant infrastructure and activities of the inia-CISA node.
-Marina Torres: What is a ICTS? How does RLASB_ICTS work? What can we do to make this installation with two nodes in inia-CISA and CReSA_ known more and better?
-Nuria Busquets: Arbovirus, interacción virus-vector
-Llilianne Ganges: Emerging Pestivirus

d) Other:
(Provide website address or link to appropriate information) 12
Different dissemination works on the internet and social networks:

• Dr. Llilianne Ganges works with the children of Rubí Torre de la Llebre's primary school to design a videogame about viruses and veternary: :
http://www.cresa.cat/blogs/sociedad/es/ens-visita-lescola-torre-de-la-llebre-de-rubi-per-dissenyar-un-videojoc-cientific/

• Llilianne Ganges to the investigation of the micro virus ", the video game turned out to be a special mention to the best design, awarded by the Generalitat of Catalonia:
http://www.cresa.cat/blogs/sociedad/es/videojoc-virus-irta-cresa-escola

• The CSF eradication, our commitment: :
http://www.cresa.es/cresa3/default.asp?mod=strmenu01&anio=2016&sub=noticia386&idioma=es

• A vaccine produced from plants ?:
http://www.cresa.cat/blogs/sociedad/es/english-a-vaccine-produced-from-plants/

• The classical swine fever virus persists differently in piglets according to their age::
http://www.cresa.cat/blogs/sociedad/es/virus-peste-porcina-clasica-lechones-edad/

• Current situation of African and Classical Swine fever:
http://www.cresa.cat/blogs/sociedad/es/situacio-actual-de-la-pesta-porcina-africana-i-clasica-porkcolombia-entrevista-a-llilianne-ganges/

• IRTA-CReSA participates in the International Symposium for the Classical Swine fever in China, 2019:
http://www.cresa.cat/blogs/sociedad/es/lirta-cresa-simposi-internacional-pesta-porcina-classica/

• Collaboration agreement between IRTA-CReSA and CENSA: strengthening international cooperation in the Caribbean: http://www.cresa.cat/blogs/sociedad/es/lirta-censa-carib/

• IRTA-CReSA swine fever research on television, interview with LLilianne Ganges "Els matins" (mornings) of TV3:
http://www.cresa.cat/blogs/sociedad/es/matins-tv3-pesta-porcina-africana-irta-cresa/

• Llilianne Ganges and Virginia Aragón of IRTA CReSA receive funding for two "Llavor" projects:
http://www.irta.cat/es/las-investigadoras-llilianne-ganges-y-virginia-aragon-del-irta-cresa-reciben-financiacion-para-dos-proyectos-llavor/

• Llilianne Ganges of IRTA-CReSA at the 2019 Porks Awards in Colombia: :
http://www.cresa.cat/blogs/sociedad/es/la-investigadora-llilianne-ganges-de-lirta-cresa-als-premis-porks-2019-de-colombia/

•Detection of swine fever injuries in slaughterhouses and hunting handling establishments:
http://www.cresa.cat/blogs/sesc/deteccio-de-lesions-de-pesta-porcina-a-escorxadors-i-sales-de-tractament-de-carn-de-caca/?lang=es

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: 2
b) Seminars: 4
c) Hands-on training courses: 1
d) Internships (>1 month): 1

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	Colombia	10
a	Chinese Taipei	>10
b	Colombia	>10
b	Cuba	>10
b	China	>10
b	Chinese Taipei	>10
c	Cuba	1
d	Poland	1 (6 months)

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	900_LE1557.pdf
ISO9001	ISO 9001 (ANY 2018-2019).pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Seroneutralization test (NPLA) for CSFV antibody detection and and differentiation with other Pestiviruses (IT-A4 ESE 005)	ENAC
qRT-PCR (Hoffmann et al., 2005) for CSFV RNA diagnosis (IT-A4-EPCR 132)	ENAC
Conventional RT-PCR for Pestivirus detection (IT-A4-EPCR 232)	ENAC
Virus isolation test (CSFV) (IT-A4-EVI 019)	ENAC
ELISA for CSFV antibody detection (IT-A4-EELS 008)	ENAC

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
European African and classical swine fever viruses annual workshop	06/2019	Madrid, Spain	Speaker	Pathogenesis studies of classical swine fever virus: Applications for diagnosis and control.
14th CaribVET Steering Committee Meeting Future of Animal & Veterinary Public Health in the Caribbean	05/2019	Varadero, Cuba	Speaker	Classical Swine Fever diagnostic and research in the Caribean Region
III Seminario Internacional de Sanidad Agropecuaria (SISA 2019)/ 3rd International Seminar on Animal and Plant Health	05/2019	Varadero, Cuba	Speaker	Pathogenie of classical swine fever virus, lessons learned in the last 20 years and its applications in diagnosis and control
Porkacalidad 2019	06/2019	Bogotá, Colombia	Speaker	La investigación como piedra angular del laboratorio de referencia de la OIE en PPC: Estudios de patogenia de PPC y PPA
2019 international symposium of Classical Swine Fever	10/2019	Beijing, China	Speaker	Research in Classical Swine Fever Immunopathogenesis: Applications for diagnosis and control.
Experience Exchange on Prevention Techiques and training course of Diagnosis of Classical swine fever	11/2019	Taipei city	Speaker	Research in Classical Swine Fever: Applications for Diagnosis and Control

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.
Validation of diagnostic protocols: Real time RTPCR, Conventional RTPCR, Antigen ELISA, Virus Isolation, Sequencing, Virus neutralization assay antibody ELISA	participant	47	participating CSF OIE Ref. Labs: -National Veterinary Research Institute, Pulawy, Poland -Animal Health and Veterinary Laboratories Agency, Weybridge, UK - Canadian Food Inspection Agency National Centre for Foreign Animal Disease Winnipeg, Canada -Animal Health Research Institute, Tamsui, New Taipei City, Taiwan - IRTA CReSA Bellaterra (Barcelona), Spain - Organising OIE Ref. Lab: University of Veterinary Medicine of Hannover, Department of Infectious Diseases, Institute of Virology, Hannover, German

[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
Pestivirus Characterization	Update on the pathogenesis, molecular biology and immunology of Pestivirus	OIE Ref. Lab: University of Veterinary Medicine of Hannover, Department of OIE/EU CSF Reference Laboratory, Infectious Diseases, Institute of Virology, Hannover, German
Pathogenesis and immune response of African swine fever and classical swine fever virus infections.	The study of the pathogenesis and immune response of ASFV and CSFV subclinical infections	OIE CSF Reference Laboratory, National Veterinary Research Institute, Pulawy,Poland

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
Validation of diagnostic protocols: Real time RT-PCR, Conventional RT-PCR, Virus neutralization assay and antibody ELISA Test	47	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐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?

Yes

Kind of consultancy	Location	Subject (facultative)
Revision of the OIE Technical Disease card on CSF	Remote	Review of OIE Standards
Review of the vaccine section in the CSF 2.08.03 Chapter from Revision the OIE Manual Manual of Diagnostic Tests and Vaccinesfor Terrestrial Animals, 2019	Remote	Review of OIE Standards

25. Additional comments regarding your report: