

OIE Reference Laboratory Reports Activities

Activities in 2020

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	African swine fever
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Name (including Title) of Head of Laboratory (Responsible Official):	Prof. José Manuel Sánchez-Vizcaíno. DVM, Ph.D
Name (including Title and Position) of OIE Reference Expert:	Prof. José Manuel Sánchez-Vizcaíno. DVM, Ph.D. Catedrático del Departamento de Sanidad Animal de la Facultad de Veterinaria de la Universidad Complutense de Madrid
Which of the following defines your laboratory? Check all that apply:	Academic Other: Research and Education

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)

No

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?

Yes

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

Yes

Name of the new test or diagnostic method or vaccine developed	Description and References (Publication, website, etc.)
ELISA indirect	Sánchez-Vizcaíno, J.M. Martín, L., Ordás. A. (1979): Adaptation and evaluation of Enzyme-linked immunosorbent assay for the detection of African swine fever antibodies. <i>Laboratory</i> , 67 (400):311-319
Inmunoblotting	Pastor, M.J., Laviada, M.D., Sánchez-Vizcaíno, J.M., Escribano, J.M. (1989): Detection of African swine fever virus antibodies immunoblotting assay. <i>Canadian journal of veterinary research</i> , 53 (1):105-107
ELISA indirect (faeces)	Nieto-Pelegrin E., Rivera-Arroyo B. and Sánchez-Vizcaíno J.M. (2015) First detection of antibodies against African swine fever virus in faeces samples. <i>Transbound. Emerg Dis.</i> 62(6): 594-602. doi: 10.1111/tbed.12429.
ELISA indirect (oral fluid)	Giménez-Lirola L.G., Mur L., Rivera B., Mogler M., Sun Y., Lizano S., Goodell C., Harris D.L., Rowland R.R., Gallardo C., Sánchez-Vizcaíno J.M., Zimmerman J. (2016) Detection of African Swine Fever Virus Antibodies in Serum and Oral Fluid Specimens Using a Recombinant Protein 30 (p30) Dual Matrix Indirect ELISA. <i>PLoS One.</i> 9;11(9):e0161230. 9/2016.
Vaccine prototype against African swine fever virus (Lv17/WB/Rie1)	Barasona JA., Gallardo C., Cadenas-Fernández E., Jurado C., Rivera B., Rodríguez-Bertos A., Arias M., Sanchez-Vizcaino JM. "First Oral Vaccination of Eurasian Wild Boar Against African Swine Fever Virus Genotype II". <i>Frontiers in veterinary science</i> , 6(137):1-10. 04/2019.

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
MEXICO	Training conferences on ASF prevention, surveillance and control systems	Presential conferences
JAPAN	Intensive course on ASF monitoring and control, Critical Point Analysis, monitoring and control programmes Acting in the face of an outbreak	Presential interactive course in our Madrid laboratory
KOREA (REP. OF)	Intensive course on ASF monitoring and control, Critical Point Analysis, monitoring and control programmes Acting in the face of an outbreak	Presential interactive course in our Madrid laboratory
CHILE	Course on the most appropriate surveillance systems to prevent ASF from entering Chile	Videoconference for SAG and ASPROCER staff
VIETNAM	Training course on ASF in collaboration with the University of Minnesota, USA (OIE Collaborating Center)	Written documents and different chapters on ASF disease control
MEXICO	Lecture to the members of the Mexican Academy of Veterinary Medicine on all aspects of ASF	Presential conference
CHILE	Videoconference on the global situation of ASF and its future perspective for Asia	Videoconference for ASPROCER and swine producers in Asia
ITALY	Situation of ASF in Europe and future perspectives	Videoconference and general discussion for pig swine producers and veterinarians

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
Study of African Swine Fever virus and African Horse Sickness proteins production in yeast in order to use them as immunogens and diagnostic reagents	1 year	Study of the production of proteins of the African swine fever virus in yeast in order to use them as immunogens and diagnostic reactive	serYmun Yeast GmbH	GERMANY
Single-cycle Replicon-based African Swine Fever Virus Subunit Vaccine” under the funding opportunity of the 2018 USDA AFRI Foundational Proposal [Program Area-A1221]	1 year	In vivo test of a prototype vaccine against African swine fever virus	Kansas State University	UNITED STATES OF AMERICA
Intervet International BV (MAH)/ MSD 50-2019	2 years	In vivo testing of a prototype vaccine against African swine fever virus	Intervet International BV (MAH)	THE NETHERLANDS
VACDIVA: A safe DIVA vaccine for African Swine Fever control and eradication	4 years	Development of an effective and safe DIVA vaccine against African swine fever virus	Intervet International BV (MAH), Istituto Zooprofilattico Sperimentale della Sardegna (IZS), State veterinary institute Jihlava (SVI), Veterinaar Ja Toidulaboratoorium (VFL), Max Planck Institute (MPG), National Food Chain Safety Office (NFCSO), Partikas Drosibas, Dzivnieku Veselibas un vides Zinatniskais Institutsbiors (BIOR), Nacionalinis Maisto ir veterinarijos rizikos vertinimo institutas (NFVEAI), Faculdade de Medicina Veterinária (FMV), China Animal Health & epidemiology Center National Research Center for Exotic Animal Diseases (CAHEC), FGI Federal Center for Animal Health (ARRIAH), International Livestock Research Institute (ILRI)	CHINA (PEOPLE'S REP. OF) CZECH REPUBLIC ESTONIA GERMANY HUNGARY ITALY KENYA LATVIA LITHUANIA PORTUGAL RUSSIA THE NETHERLANDS

Unravelling the effect of contact networks and socio-economic factors on the evolution, emergence and spread of infectious diseases at the wildlife-domestic interface	3 years	To better understand the transmission dynamics of emerging transboundary animal diseases (TADs) that hamper food security and limit the socio-economic development of human communities	UC David, French Agricultural Research Centre for International Development (CIRAD), University of Pretoria (UP), University Eduardo Mondlane (UEM), Agricultural Research Institute of Mozambique, Maputo (IIAM)	UNITED STATES OF AMERICA
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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:

The epizootiological data collected is detailed in the articles published mentioned below.

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:

The epizootiological data processed and analysed were disseminated by the methods mentioned below.

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: 8

1. Aleksandra Kosowska, Estefanía Cadenas-Fernández, Sandra Barroso, Jose M. Sánchez-Vizcaíno and Jose A. Barasona. "Distinct African Swine Fever Virus Shedding in Wild Boar Infected with Virulent and Attenuated Isolates". MDPI, Vaccines 2020, 8, 767. 12/2020.

2. Fernandez-Carrion E., Barasona JA., Sánchez A., Jurado C., Cadenas-Fernández E., Sanchez-Vizcaino JM. "Computer Vision Applied to Detect Lethargy through Animal Motion Monitoring: A Trial on African Swine Fever in Wild Boar". Animals, 10(12):E2241. 11/2020.

3. Rodriguez-Bertos A., Cadenas-Fernández E., Rebollada A., Porrás-Gonzalez N., Mayoral-Alegre F., Barreno San Antolín L., Kosowska A., Tome-Sanchez I., Barasona JA., Sanchez-Vizcaino JM. "Clinical Course and Gross Pathological Findings in Wild Boar Infected with a Highly Virulent Strain of African Swine Fever Virus Genotype II". Pathogens, 9(9):E688. 09/2020

4. Bosch J., Barasona JA., Cadenas-Fernández E., Jurado C., Pintore A., Denurra D., Cherchi M., Vicente J., Sanchez-Vizcaino JM. "Retrospective Spatial Analysis for African Swine Fever in Endemic Areas to Assess Interactions Between Susceptible Host Populations". PLoS ONE, 15(5):e0233473. 05/2020.
 5. Ito S., Bosch J., Jurado C., Sanchez-Vizcaino JM., Isoda N. "Risk Assessment of African Swine Fever Virus Exposure to Sus scrofa in Japan Via Pork Products Brought in Air Passengers` Luggage". Pathogens, 9(4):302. 04/2020.
 6. Peris A., Closa F., Marco I., Acevedo P., Barasona JA., Casas Diaz E. "Towards the comparison of home range estimators obtained from contrasting tracking regimes: the wild boar as a case study". European Journal of Wildlife Research, 66:3200. 03/2020.
 7. Ito S., Jurado C., Sanchez-Vizcaino JM., Isoda N. "Quantitative risk assessment of African swine fever virus introduction to Japan via pork products brought in air passengers` luggage". Transboundary and Emerging Diseases, 67(2):894-905. 03/2020.
 8. Cadenas-Fernández E., Sanchez-Vizcaino JM., Kosowska A., Rivera B., Mayoral-Alegre F., Rodriguez-Bertos A., Yao J., Bray J., Lokhandwala S., Mwangi W., Barasona JA. "Adenovirus-vectored African Swine Fever Virus Antigens Cocktail Is Not Protective against Virulent Arm07 Isolate in Eurasian Wild Boar". Pathogens, 9(171):1-14. 02/2020.
- b) International conferences: 4
1. Sanchez-Vizcaino JM. "ASF, the biggest and least known threat ". XXVI Ciclo de Conferencias AMVECAJ. Jalisco, México. February 6, 2020. (Videoconference)
 2. Sanchez-Vizcaíno JM. "Global situation of ASF in Asia. Perspectives for the future". Organized by ChilePork for Asia October, 5, 2020.
 3. Sanchez-Vizcaíno JM. FAO/OIE." Vaccination strategy in different production systems and epidemiological scenarios". October 26-30, 2020 (videoconference)
 4. Sanchez-Vizcaino JM. "What if the PPA arrives?". Porcixpert. Bogotá, Colombia. December 1, 2020. (videoconference)
- c) National conferences: 4
1. Sanchez-Vizcaino JM., Barasona JA. "Latest developments on African swine fever vaccine". Feria Ganadera, Industrial y Agroalimentaria SEPOR 2020. Lorca, Spain. 26/10/2020. (Online communication)
 2. Munoz-Perez C. "African Swine Fever: The biggest threat to global pig production". VI VETINDOC - PhDay. Madrid, Spain. 14/10/2020. (Oral communication)
 3. Sanchez-Vizcaino JM. "ASF and its impact on international markets". Conferencias: Crisis o Creces. Madrid, Spain. 25/09/2020. (Online communication)
 4. Sanchez-Vizcaino JM. "ASF Module". PorciFORUM. La Llotja, Spain. 04/03/2020. (Oral communication)
- d) Other:
- (Provide website address or link to appropriate information) 10
1. 15/10/2020 Webinar on ASF organized by ChilePork, with the participation of Prof. José Manuel Sánchez-Vizcaíno.
<http://www.chilecarne.cl/sanchez-vizcaino-destaco-la-importancia-de-reforzar-las-medidas-de-bioseguridad-en-granjas-con-el-objetivo-de-evitar-la-entrada-de-la-peste-porcina-africana/>
 2. Sánchez-Vizcaíno: Spain has a "significant" risk of entry of swine fever. Efeagro.com. Interview 11/10/2020.
<https://www.efegro.com/noticia/sanchez-vizcaino-peste-porcina/>
 3. Sanchez-Vizcaino JM. "The last order for the virus exterminator". Ciencia. El País. Madrid, Spain. 08/10/2020. (Web interview). <https://elpais.com/ciencia/2020-10-08/el-ultimo-encargo-para-el-exterminador-de-virus.html>
 4. Sanchez-Vizcaino JM. "How to fight ASF in 2020". Webinar. La Peste Porcina Africana en 2020. Madrid, Spain. 23/09/2020. (Online communication).
https://www.youtube.com/watch?v=wTSYFhukF6w&feature=emb_logo&ab_channel=TheFarmRevolution

5. 70 scientists behind swine fever vaccine. Madrid, Spain. 15/06/2020.
https://www.alimente.elconfidencial.com/bienestar/2020-06-15/cientificos-espanoles-vacuna-pestes-porcina-covid-19_2632811/
6. Vidal A., Marco E., Sanchez-Vizcaino JM. "A vision of African Swine Fever". The Webinar. Madrid, Spain. 11/06/2020. (Online communication).
https://www.youtube.com/watch?v=thiw3MCLbOg&feature=emb_logo&ab_channel=TheFarmRevolution
7. Sanchez-Vizcaino JM. "The battle against the African Swine Fever continues with José Manuel Sánchez Vizcaíno!". porcino.info. Madrid, Spain. 20/04/2020. (Web interview).
<https://porcino.info/la-batalla-frente-a-la-pestes-porcina-africana-continua-con-jose-manuel-sanchez-vizcaino/>
8. Sanchez-Vizcaino JM. "ASF in the pig sector". Instagram @Porcinews_revista. Madrid, Spain. 16/04/2020. (Web interview).
https://www.youtube.com/watch?v=f14T0AMGEg&feature=emb_logo&ab_channel=porciNewsenespa%C3%B1ol
9. MSD announces its collaboration with the VACDIVA project against ASF. Madrid, Spain. 13/02/2020.
<https://www.animalshealth.es/empresas/msd-animal-health-anuncia-su-colaboracion-con-proyecto-vacdiva-contra-pestes-porcina-africana-ppa>
10. <https://www.sanidadanimal.info/es/investigacion/lineas-investigacion/pestes-porcina-africana#mapa>

**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: 8
 b) Seminars: 8
 c) Hands-on training courses: 8
 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,b,c	JAPAN and REPUBLIC OF KOREA	8

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)
ISO 17025	817_LE1410.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Real-time PCR	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
FAO/OIE 2020 African Swine Fever: An unprecedented global threat A challenge to livelihoods, food security and biodiversity. Call to action	10/20	on-line	Speaker	Vaccination strategy in different production systems and epidemiological situations

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?

No

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?

No

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
Laboratory capability to conduct diagnosis of ASF	27	<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?

Yes

Kind of consultancy	Location	Subject (facultative)
Electronic consultation for the metadata schema	Online	OIE Virtual Biobank project

25. Additional comments regarding your report:

Our expert consultants are always at the disposal of the OIE