GF-TADs
GLOBAL FRAMEWORK FOR THE PROGRESSIVE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES

Food and Agriculture Organization of the United Nations

WORLD ORGANISATION FOR ANIMAL HEALTH

ASF Vaccination strategy:

In different production system and epidemiological scenarios

Prof. JM SÁNCHEZ-VIZCAÍNO DVM, Ph.D, DhC

VISAVET CENTER. UNIVERSITY COMPLUTENSE OF MADRID

Difficulties of ASF virus:

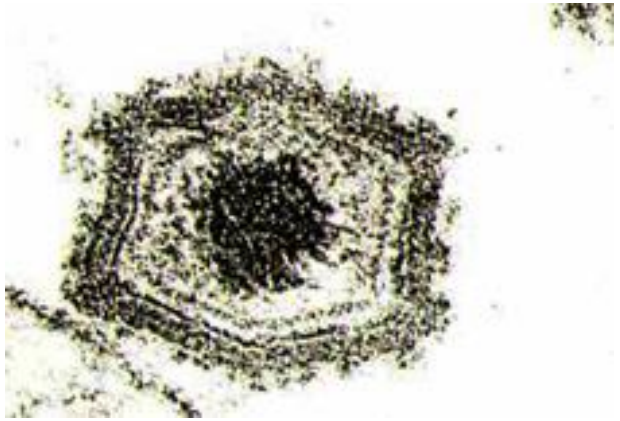
Complex virus, big size, large genome: 170-194 kb

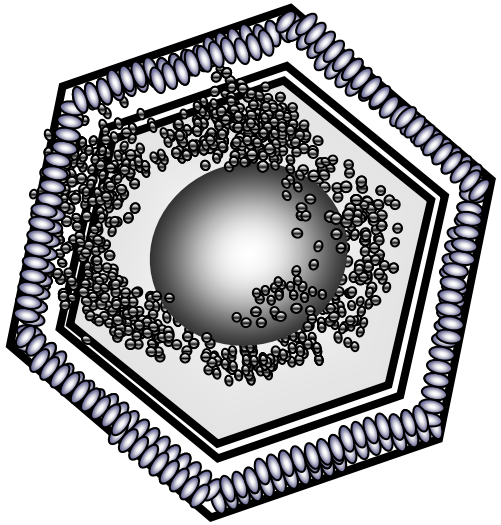
Complex molecular structure

Very Resistant in the environment

Genetic variability*

NO production of neutralizing antibodies





Possible ASF candidates:

Many trials have been done in the last decades looking for an **effective, safe and DIVA** vaccine against ASFV:

1. INACTIVATED VACCINES → Ab response. No protection

2. ATTENUATED VACCINES → Ab + cytotoxic specific

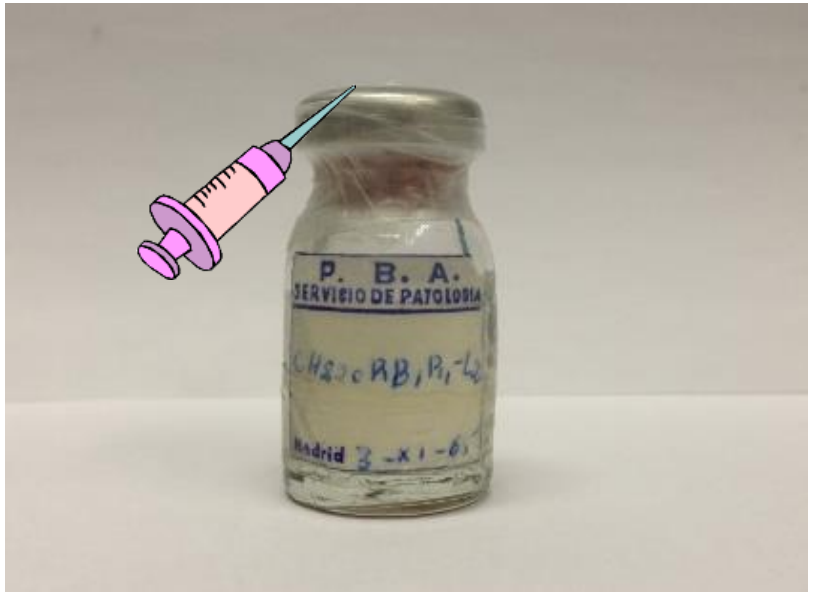
→PROTECTION against related and not related ASFv

Some induced side effects. Others no. ARE GOOD

CANDIDATES: NATURAL ATTENUATED or DELETED

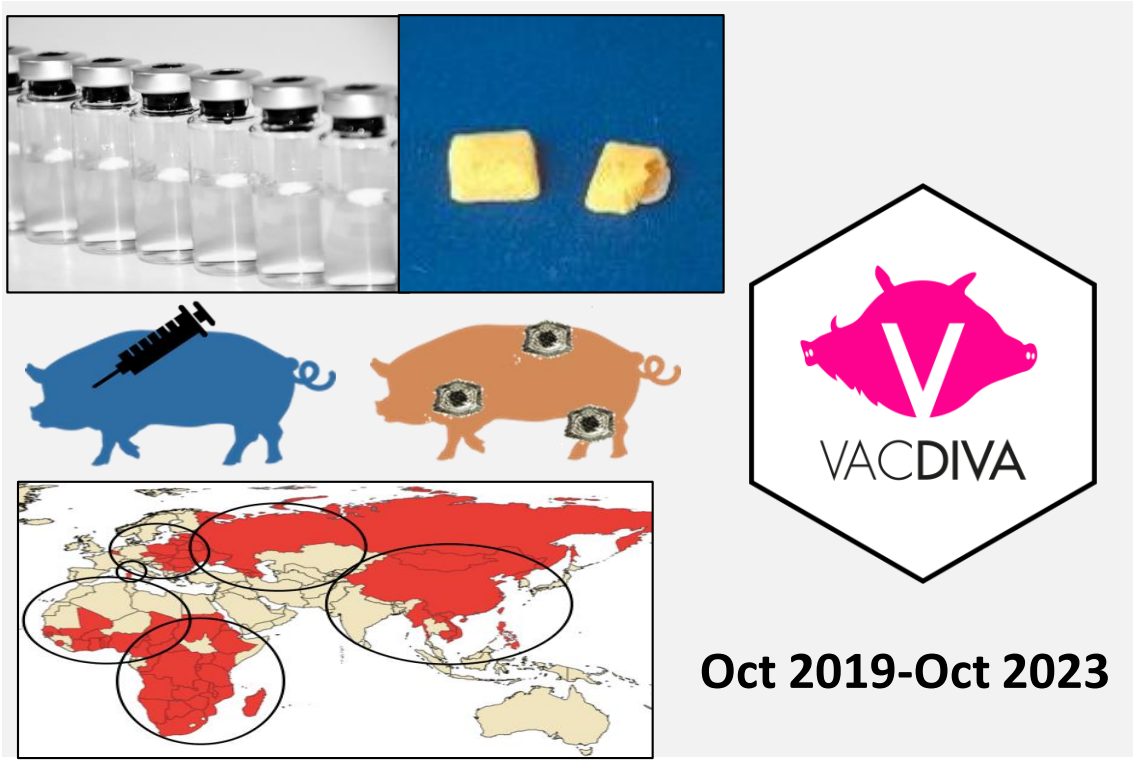
3. SUBUNITS, DNA VACCINE: LOW PROTECTIONS

4, DELETED ATTENUATED VACCINES: GOOD CANDIDATES



Attenuated ASF Vaccine 60s Portugal and Spain

Objectives of VACDIVA project:



- To provide **effective and safe DIVA vaccine**(s) **for wild boar and domestic pigs** ready for registration.
- **To develop DIVA test** to allow an accurate monitoring of the effectiveness of the vaccine.
- To design **ASF control and eradication strategies** in different epidemiological scenarios worldwide and **test the pilot vaccine** in real environments (including buspigs and warthogs).

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10.000.000 €

Coordination

16 partners from the EU

3 PARTNERS FROM NON EU CONTRIES

Candidates prototypes:

- Two natural attenuated isolates and with genes delected
- One attenuated by celular passages

TRIALS EVALUATED ALREADY IN:

WILD BOAR
and
DOMESTICS PIGS

First publication on wild boar vaccine:

First Oral Vaccination of Eurasian Wild Boar Against African Swine Fever Virus Genotype II

Jose A. Barasona[1*†], Carmina Gallardo[2†], Estefanía Cadenas-Fernández[1], Cristina Jurado[1], Belén Rivera[1], Antonio Rodríguez-Bertos[1,3], Marisa Arias[2] and Jose M. Sánchez-Vizcaíno[1]

[1]Animal Health Department, Faculty of Veterinary, VISAVET Health Surveillance Centre, Complutense University of Madrid, Madrid, Spain
[2]European Union Reference Laboratory for ASF, Centro de Investigación en Sanidad Animal (INIA-CISA), Madrid, Spain
[3]Department of Animal Medicine and Surgery, Faculty of Veterinary, Complutense University of Madrid, Madrid, Spain

FIRST WILD BOAR TRIAL UCM

Lv17/WB/Rie1 LAV vaccine prototype

Effectiviness: 92.86%

Vaccine research done or on going:

- Genetic stability in vitro and in vivo: on going
- Overdoses immunization in WB: done
- Duration of Immunity (DP and WB): on going
- Immunization in domestic pig with a largest number of animals: on going
- DIVA adaptation on going
- Immunization with bait: done
- Bait conservation on different scenarios: on going

UCM BSL3 FACILITIES

IMMUNIZATION WITH BAITS

Domestic pigs immunization: on going

- **AT CISA-INIA:**
- **INTRAMUSCULAR**
- **INTRADERMIC**
- **ORAL**
- **AT PERUGIA:**
- **INTRAMUSCULA.**
- **ORAL**

DOMESTIC PIGS TRIAL:

Lv17/WB/Rie1 LAV vaccine prototype

CISA- IINIA, SPAIN

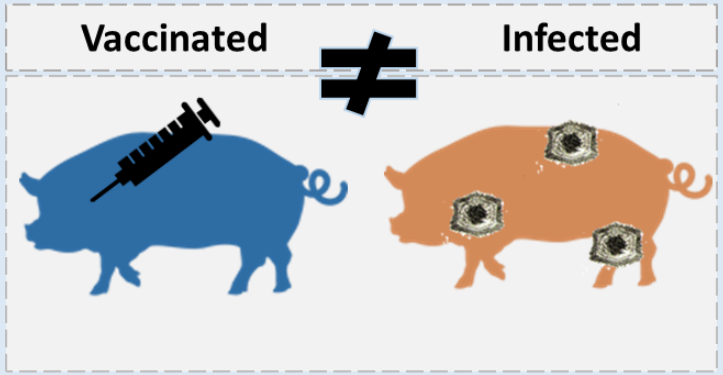
NHV: PERUGIA, ITALY

- To develop companion **DIVA tests**, associated with the prototype vaccines, that will allow the **differentiation of vaccinated from infected animals**. All assays will be adapted to be used with wild boar and domestic pig samples.

- **Specific objectives:**

  - Development of a molecular DIVA assay and DIVA immunoassays.
  - Development simultaneous detection of antigen and antibody.
  - Assessment of non-invasive and alternative samples.
  - Standardization: Proficiency Test (PT) organization.

AFS vaccine DIVA test



Efficacy and safety studies of marker vaccines

To select the most promising marker vaccine/s built under WP2 throughout *"in vivo"* **experimental efficacy and safety studies** in **domestic pigs (DP) and W. boar** as animal model for vaccination.

Specific objectives:

- "In vitro" evaluation of the compatibility of the marker vaccines with adjuvants.
- "In vivo" studies of infectivity, immunogenicity and cross-protective efficacy.
- Selection of vaccine formulation and posology.
- "In vivo" safety studies with selected marker vaccine(s).
- Evaluation of the "in vivo" genetic stability of marker vaccine(s).

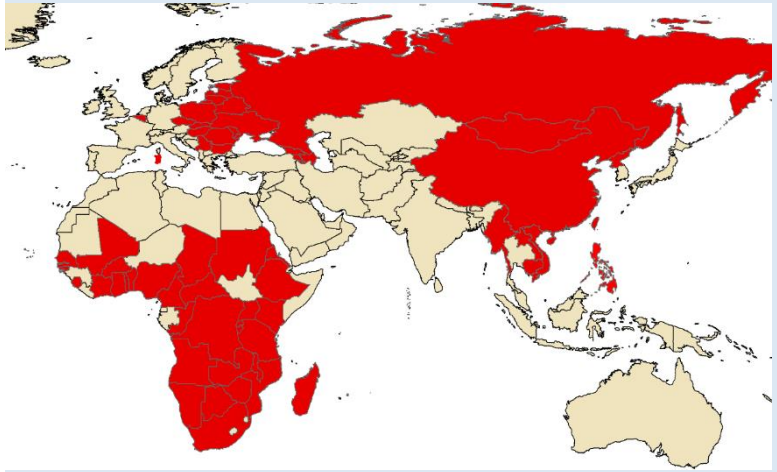
Vaccine production

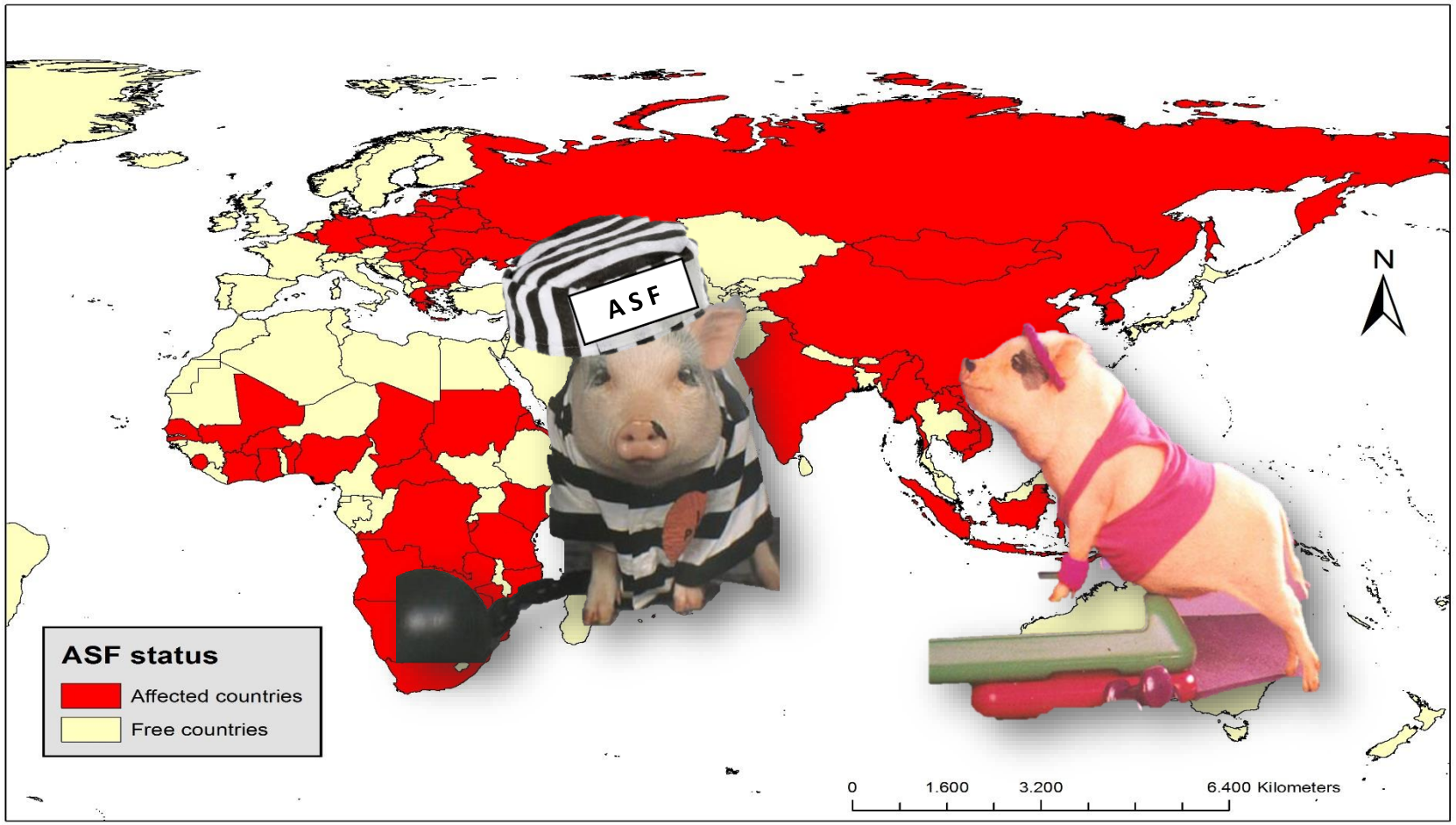
To develop a **manufacturing process for the prototype vaccine/s** with the immunological products previously tested safe and effective enough following the requirements of the **European Medicine Agency** and **authorizing agencies of countries outside EU**.

Vaccine trials in different scenarios

To identify the **differents vaccination scenarios** from ASF prevention or control, frame the **target vaccination populations** in each scenario and model different **vaccine and control strategies** to obtain a roadmap with the most cost-efficient methods towards ASF control with vaccination.

The vaccine/s validated under animals trials will be tested in a selected territory in terms of delivery, efficacy, safety and response.





OUR GOAL:

A WORLD FREE OF ASF

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Thank you. Gracias