



25TH INTERNATIONAL PIG VETERINARY SOCIETY CONGRESS 2018 International PRRS Symposium

June 11–14, 2018
Chongqing, China

Healthy Pig Safe Pork

Organizer:

International Pig Veterinary Society (IPVS)



Local Organizers:

Chinese Association of Animal Science and
Veterinary Medicine (CAAV)



China Agricultural University (CAU)



Co-organizer:

Beijing Boyar Communication Co., LTD



PROCEEDINGS VOLUME
POSTER PRESENTATIONS

II



I -139

7-day post-vaccination efficacy of the CSF CL strain produced on ovine cell line against a virulent classical swine fever (Hog cholera) challenge

Guillermo R. Risatti*¹, Sandra Perez²

¹ Department of Pathobiology and Veterinary Science, College of Agriculture, Health and Natural Resources, University of Connecticut, USA

² Centro de Investigación Veterinaria de Tandil (CIVETAN)-CONICET, Facultad de Ciencias Veterinarias, Universidad Nacional del Centro de la Provincia de Buenos Aires, Argentina

*Corresponding Author: olivier.merdy@boehringer-ingenheim.com

Introduction

Classical swine fever (CSF), also known as hog cholera, is a highly contagious viral disease classified as a notifiable (previously List A) pig disease by OIE. In an infected environment, vaccines are the basic tools for control and eradication of CSFV. This study aimed at assessing the efficacy of an attenuated CSF CL strain produced on ovine cells against a virulent CSF challenge performed 7 days post-vaccination.

Materials and Methods

Two groups of 8 CSF-negative crossbred pigs weighing 18 kg were either vaccinated with a live one dose of CL strain (>100 PD₅₀/dose) or left unvaccinated. Seven days post-vaccination, they were challenged with $5.5 \log_{10}$ TCID₅₀ CSFV of Haiti-96 strain both intramuscularly and intranasally with separated aliquots. Clinical signs, rectal temperature were monitored for 28 days post-challenge (DPC) and necropsied. Blood samples, nasal swabs and tonsil scrapings were regularly collected and assayed for blood formulation, sera antibody titres (E2-E^{ms} ELISAs, SN titrations), and viral loads in total blood, nasal and tonsil mucus.

Results

All controls showed typical acute CSF justifying euthanasia on ethical ground 22 DPCH at the latest. They also developed severe leukopenia and lymphopenia. Necropsic lesions were evocative of chronic form of CSF. None of the vaccinates developed any sign of CSF. CSFV was detected in controls from 4 DPC in blood plateauing close to $6 \log_{10}$ TCID₅₀/mL. CSFV was detected in nasal and tonsillar mucus from 8DPC reaching up to $4.8 \log_{10}$ TCID₅₀/mL. Vaccinates showed no detectable CSFV in any sample post-challenge. All pigs were antibody negative before challenge. A seroneutralizing anamestic reaction was evidenced as early as 7 DPC in all vaccinates whereas ELISA antibody titres turned positive slower. Serological response to challenge was almost absent in controls.

Conclusion

Viral circulation in herds relies mainly on direct nose-to-nose contacts and in-utero transmission. The ability of vaccines to limit CSFV transmission is vital for control and eradication strategies. Under the conditions of the study, the CL strain was able to totally prevent CSF and totally abolished both CSFV viremia and mucosal shedding as early as 7 days post-vaccination, thus showing its relevance for whole herd strategies. Additionally, it was noticed that ELISA correlated poorly with protection.

Keywords: classical swine fever, vaccination, transmission

