

Technical University of Denmark



Rescue of the CSFV Koslov strain from a cloned cDNA

Fahnøe, Ulrik; Belsham, Graham; Höper, Dirk; Beer, Martin; Rasmussen, Thomas Bruun

Publication date:
2014

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):

Fahnøe, U., Belsham, G., Höper, D., Beer, M., & Rasmussen, T. B. (2014). Rescue of the CSFV Koslov strain from a cloned cDNA. Abstract from Workshop on Laboratory Diagnosis of African and Classical Swine Fever (ASF and CSF), Madrid, Spain.

DTU Library

Technical Information Center of Denmark

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



“Workshop on Laboratory Diagnosis of African and Classical Swine Fever (ASF and CSF)”

June 2nd and 3rd 2014

Centro de Investigación en Sanidad Animal

CISA-INIA, Valdeolmos 28130, Madrid, Spain.

E-mail: eurl.asf@inia.es;

organised by:

EU Reference Laboratory for ASF

**Centro de Investigación en Sanidad Animal (CISA-INIA)
Valdeolmos, Spain**

and

EU Reference Laboratory for CSF

**University of Veterinary Medicine Hannover
Institute for Virology
Hannover, Germany**

In cooperation with

DG Sanco

Tuesday, 03.06.2014. Classical Swine Fever (CSF) session

08:45-09:00 *Opening (organisational details).*

Francesco Berlingieri (SANCO, EC)
Paul Becher (EURL CSF)

CSF - Session I: "EU Reference Laboratory activities"

Chair: Marisa Arias (ES)

9:00-9:30 Comparative Evaluation of CSF ILCT 2013. S. Austermann-Busch (CSF EURL, DE).

9:30-9:45 Further EURL activities in 2013/14. S. Austermann-Busch (CSF EURL, DE)

CSF - Session II: "Scientific reports"

Chair: Andrzej Lipowski (PL)

9:45-10:05 Different batches of CSF antibody ELISA: variation in sensitivity. J. Grom (SI)

10:05-10:25 A new concept for the development of a CSF-DIVA ELISA. D. Meyer (CSF EURL, DE)

10:25-10:45 The Lapinized Chinese vaccine strain against CSFV. Sterilizing protection or viral evolution promoting? L. Ganges (ES)

10:45-11:15 *Coffee break*

11:15-11:35 Alternative sampling strategies in wild boar, A. Petrov (DE)

11:35-12:05 Welfare issues of laboratory swine used in experimental units for CSF research. K. Marinou (GR)

12:05-12:25 Genetically modified viruses as vaccine candidates – Lessons learned from a chimeric Pestivirus. A. Postel (CSF EURL, DE)

12:25-12:45 Rescue of the CSFV Koslov strain from a cloned cDNA, T.B. Rasmussen (DK)

12:45-13:00 Classical swine fever in wild boars: Demonstration of CSF freedom in Northern Vosges - France. M.F. Le Potier (FR)

13:00-14:00 *Lunch*

14:00-14:20 Definition of genogroup of classical swine fever virus isolates by HRM-analysis. I.A. Titov (RU)

CSF Session III: "EU projects and working groups" / invited experts

Chair: Joze Grom (SI)

14:30-15:00 CSFV_goDIVA: Update on CSF marker vaccine. F. Koenen (BE)

15:00-15:30 EURL CSF WB database for CSF surveillance in wild boar. C. Staubach (DE)

CSF session IV: “Country reports: EU Member states and third countries”

Chair: Helen Crooke (UK)

15:30-15:45	Current CSF situation in Latvia, R. Granta (LV)
15:45-16:00	Laboratory diagnostics and epizootic situation for classical swine fever in the Republic of Belarus, O. Mezhennikova (BY)
16:00-16:30	<i>Coffe break</i>
16:30-16:45	CSF situation in the Republic of Serbia, V. Milicevic (RS)
16:45-16:55	CSF situation in the Republic of Macedonia 2014 – Country report, Diagnostic Capacity and Structure of the NRL for CSF, I. Djadjovski (MK)
16:55-17:00	CSF situation in Montengro, B. Adzic (ME)
17:00-17:30	Final discussion on conclusions and recommendations
17:30	<i>Closure of the workshop</i>

Rescue of the CSFV Koslov strain from a cloned cDNA

Ulrik Fahnøe¹, Graham J. Belsham¹, Dirk Höper², Martin Beer² and **Thomas Bruun Rasmussen**¹

¹DTU Vet, Technical University of Denmark, Lindholm, DK-4771 Kalvehave, Denmark

²Institute of Diagnostic Virology, Friedrich-Loeffler-Institut, Greifswald-InselRiems, Germany

The classical swine fever virus (CSFV) strain “Koslov” is highly virulent with a mortality rate of up to 100% in pigs. In this study, we have generated full-length CSFV cDNA clones starting from the blood of Koslov virus infected pigs using a strategy that enables the production of numerous full-length cDNA clones directly from the viral RNA. However, each cDNA obtained initially was non-functional in terms of infectivity when RNA transcripts were introduced into porcine PK15 cells. Full-length sequencing of the cloned cDNAs revealed deleterious non-synonymous mutations including frameshifts. We therefore modified a non-functional cDNA by site directed mutagenesis, removing the non-synonymous mutations step-by-step, thereby building a consensus Koslov genome sequence at the amino acid level. Virus (vKos) rescued from this consensus cDNA clone displayed similar growth kinetics as the parental Koslov strain when tested in cells. Moreover, vKos was highly virulent when tested in pigs, with infected animals displaying pronounced clinical symptoms leading to high mortality.