Safe trade of healthy, vaccinated animals

WP 4.3 DIVA diagnostics

Uttenthal, Åse

Publication date:
2010

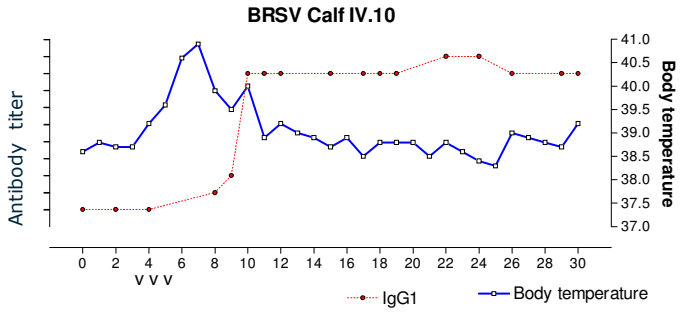
Document Version
Publisher's PDF, also known as Version of record

EPIZONE

Increase excellence by integration and collaboration

Safe trade of healthy, vaccinated animals

WP 4.3 DIVA diagnostics



The work performed in WP 4.3 is used to improve the diagnostics in general. Diagnostics includes virus detection early after infection(Genetic DIVA) and diagnostic based on the specific antibodies (see figure above where BRSV is used as example).

Genetic DIVA: Genetic differentiation of infected from vaccinated animals is an important new strategy for disease control. As C-strain is used worldwide DIVA diagnostics differentiating C-strain vaccinated animals would be a large step ahead. A real-time reverse transcription polymerase chain reaction (RT-PCR) protocol for differentiation of C-strain "Riems" vaccine virus from CSF virus (CSFV) field isolates was published.

Genetic DIVA has been used to differentiate CSFV infection in wild boar in areas where prophylactic live bait vaccination was used.

Serological DIVA diagnostics:

BTV DIVA diagnostics: The first results obtained indicate that BTV-inactivated vaccines used in the field are not free of NS 2 and 3 proteins. A better purification of these vaccines is necessary to develop this kind of DIVA strategy. NS1 antibodies are not always present after infection.

CSFV DIVA diagnostics: For the evaluation of CSFV Antibody ELISAs seven commercially available test kits from seven providers were tested in five CSF reference laboratories. A manuscript was submitted for publication. New expression systems are being tried for production of antigens for serological tests.

FMDV DIVA diagnostis: A considerable amount of work has been spent to stabilise the home-made ELISA for the detection of antibodies to **FMDV NSP test** (called 3ABC-trapping ELISA) developed at IZSLER. This work led to the availability of a ready-to-use, stable kit, then usable also in poorly equipped laboratories.

International publications from this year:

- Leifer,I., Everett,H., Hoffmann,B., Sosan,O., Crooke,H., Beer,M., and Blome,S. (2010). Escape of classical swine fever C-strain vaccine virus from detection by C-strain specific real-time RT-PCR caused by a point mutation in the primer-binding site. J. Virol. Methods.
- Rasmussen,T.B., Reimann,I., Uttenthal,A., Leifer,I., Depner,K., Schirrmeier,H., and Beer,M. (2010). Generation of recombinant pestiviruses using a full-genome amplification strategy. Vet. Microbiol. *142*, 13-17.
- Uttenthal,A., Parida,S., Rasmussen,T.B., Paton,D.J., Haas,B., and Dundon,W.G. (2010). Strategies for differentiating infection in vaccinated animals (DIVA) for foot-and-mouth disease, classical swine fever and avian influenza. Expert. Rev. Vaccines. *9 (1) 73-87.*
- Liu L, Xia H, Belák S, Widén F (2009). Development of a primer-probe energy transfer real-time PCR assay for improved detection of classical swine fever virus. J Virol Methods. *160*:69-73.

WP leader: Åse Uttenthal, National Veterinary Institute DTU, Lindholm, Denmark.
ASUT@VET.DTU.DK

DTU