

Safe diagnostics for control of zoonotic pathogens

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Coxiella burnetii the agent of Q fever causes epidemics in domestic ruminants, especially sheep and goats partially associated with human diseases worldwide.

The often subclinical etiopathology as well as the improvable sensitivity and specificity of the currently used diagnostics prevent a fast and reliable identification of infected animals. Thus, new, innovative measures are necessary.

The aim of the project is to develop a monoclonal antibody-based pen-side test. For this purpose, a new infection model based on ovine trophoblasts, the natural host cells of *Coxiella*, will be developed. By means of transcription analysis, open reading frames (ORFs), which are strongly expressed during an infection, will be identified.

ORFs, which are potentially immunogenic according to the literature, will be cloned, expressed and tested for their immunogenicity and cross-reactions. Monoclonal antibodies against selected proteins will be produced by project partners, conjugated with fluorescence particles and used in a membrane-based heterogeneous immunoassay, which will be readable with a scanner right in the stable.

The development of a cheap, easy-to-use and mobile test system allows the direct and fast detection of infected animals on the field. This test will improve the detection of infected animals and their elimination, thus reducing reproduction, economic and ecological losses.

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