



## **Macroscopic and microscopic lesions in pigs with experimentally induced non-bacterial thrombotic endocarditis**

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## IMMUNOHISTOCHEMICAL DETECTION OF HEPATITIS E VIRUS IN NATURALLY AFFECTED PIGS

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### Introduction

A swine hepatitis E virus (HEV) was recognized as causative agent of subclinical hepatitis. HEV-infected pigs had evidence of multifocal and periportal lymphoplasmacytic hepatitis with focal hepatocellular necrosis. Viral infection was detected by in situ hybridization in liver, mesenteric lymphnodes, kidneys and in enterocytes. The aim of this study was to detect HEV by immunohistochemistry (IHC) and to determine infected organs and cell types.

### Material and methods

Paraffin blocks of lung, myocardium, liver, spleen, intestines, kidney and submandibular, mediastinal and mesenteric lymphnodes were investigated. The samples were collected from 3 pigs previously found HEV-positive by nested RT-PCR. For IHC detection a mouse anti-HEV Mab (USBiological\*) is used.

### Results

HEV antigen was detected in liver samples of all 3 pigs in periportal inflammatory cells and in hepatocytes in centrilobular degeneration process. Positive signal was more intensive near liver hylus and gall bladder but also found in mesenteric lymphnodes.

### Conclusion

The presence of HEV was detected in liver and mesenteric lymphnodes. The other investigated organs were found negative. IHC is a useful tool and highly specific method for HEV detection. By our results, parts of liver near hylus and gall bladder can be specific and suitable place for sampling.

## MACROSCOPIC AND MICROSCOPIC LESIONS IN PIGS WITH EXPERIMENTALLY INDUCED NON-BACTERIAL THROMBOTIC ENDOCARDITIS

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### Introduction

Infective endocarditis models have been established in several laboratory animals. However, this disease model has only sparsely been described in pigs despite advantages such as cardiovascular, anatomical, and physiological similarities to humans, the possibility of collecting large blood volumes and to study prosthetic valve endocarditis. The purpose of this study was to further develop a method for induction of non-infectious thrombotic endocarditis in pigs, which in future studies will be used as a basis for experimental bacterial endocarditis.

### Materials and Methods

Eight pigs underwent surgical placement of a catheter from the carotid artery to the left ventricle, by ultrasonographic guidance. The catheter remained in situ until euthanasia 2, 4, 5, and 6 days later, followed by a post-mortem macroscopic and microscopic examination.

### Results

In six pigs the catheter was placed in the left ventricle, whereas in two pigs it was located extracardially. The six pigs all developed mural endocarditis lesions and four of these also had valvular endocarditis. Histologically, lesions consisted primarily of an endothelial disruption with overlying fibrin and thrombotic material.

### Conclusion

The results are promising for the development of an infective endocarditis model, though there is a need for refinement regarding the catheter placement.