

Invitation to the “PaP” PhD Seminar

We would like to kindly invite you to the presentation of **Prof. Tomasz Stadejek**, Faculty of Veterinary Medicine, Warsaw University of Life Sciences, Poland

Date: 19 April 2018, Thursday

Time: 5:00 p.m. (s.t.)

Room: lecture hall E

Title: “Porcine circoviruses: the diseases, diagnosis and control”

Circoviruses belong to the genus *Circovirus* in the family *Circoviridae* and are non-enveloped, icosahedral viruses with a single-stranded circular DNA (ssDNA) genome of approximately 2 kb, the smallest known autonomously replicating viral genomes. Until recently, two porcine circovirus (PCV) species were well studied, PCV1 and PCV2. PCV1 is generally considered non-pathogenic while PCV2 infection can be either asymptomatic or cause a variety of clinical symptoms known as porcine circovirus disease (PCVD) with significant economic impact. The diagnosis of the disease is complex and involve clinical evaluation of an animal and the herd, detection of lesions in lymphoid tissue as well as detection of large amounts of PCV2 DNA or antigens within these lesions. Since the introduction and widely use vaccines against PCV2 the significance of acute PCVD diminished but the virus continues to persist on many farms causing subclinical infection. The role of such subclinical infections in vaccinated farms is not known. Occasionally vaccination failure is observed but such cases are rarely being analysed in deep and the background behind it is usually not revealed. Also, laboratory diagnosis of PCV2 is being performed less often, partially because the diagnostic data interpretation is more difficult to perform than in case of acute PCVD outbreaks. Positive selection of PCV2 viruses following introduction of the vaccines was described but many studies indicated that genetic diversity of PCV2 does not hamper vaccination efficacy. On many farms vaccination against PCV2 led to elimination of the virus so it raised questions of the value of continuing of the protocol.

In 2016 a novel porcine circovirus species named PCV3 was discovered. PCV3 was detected in different states of USA in suckling piglet and 9-10 weeks old fatteners with myocarditis or respiratory disease. Also, PCV3 was identified in sows with skin lesions consistent with PDNS, as well as in mummified fetuses aborted from such sows. In China PCV3 was detected in piglets with respiratory disease and fever $>40^{\circ}\text{C}$ and in cases of reproductive failure. Pigs from most of the described cases were free from PCV2 and PRRSV. In Brazil PCV3 was detected in cases of reproductive failure and in Thailand in cases of PRDC. PCV3 was also detected in random samples from Poland, Italy, Spain, Denmark and Germany. Genetically, PCV3 seems to be less diverse than PCV2 but it is clear that the virus circulated in pigs globally for many years before its discovery. The true role of PCV3 in pig pathology, including multifactorial diseases, remains to be discovered.

We are looking forward to seeing you there!