VIRAL DISEASES

VVD-001

MOLECULAR IDENTIFICATION OF PORCINE CIRCOVIRUS TYPE 3 (PCV3) INFECTIONS ON COMMERCIAL PIG FARMS IN SPAIN

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Introduction

Two species of Porcine Circovirus (PCV) are well studied at date; PCV1 which is considered non-pathogenic and PCV2 that causes significant economic impact in swine industry worldwide. Recently, a new circovirus named PCV3 has been discovered in sows affected by PDNS and reproductive failure in USA and China. However, there is still sparse information about this virus. In this study we develop a qPCR assay for detection of PCV3 and perform a preliminary evaluation of this agent in Spain.

Material & Methods

A qPCR assay targeting the *cap* gene was developed for identification of PCV3. A total of 97 clinical cases (abortion=28; respiratory=69) from Spain (n=91) and Portugal (n=6) were evaluated. Samples included fetal tissue, lung, oral fluid, swabs and BALF; and were also tested for PCV2, PRRSV and Influenza-A. Nucleotide sequences for *cap* gene from some PCV3-positive samples were additionally obtained.

Results

The qPCR assay showed specific detection of PCV3 with a LOD of 50 copies/reaction. PCV3 was identified in 10% of clinical cases, in 5 of 17 Spanish provinces and mainly in animals with respiratory disease (9/10). This circovirus was detected in all the different kind of samples, mainly in lungs (4/33) and oral fluids (3/13); but always in co-infection with other pathogens. Sequences for Spanish PCV3 showed >99% homology to sequences available in the GenBank for this circovirus.

Discussion & Conclusion

Here in, we describe first molecular identification of PCV3 infection on commercial pig farms in Spain, but also Portugal. Presence of this virus in farms from different provinces could suggest a remarkable distribution of PCV3 in our country. Although most data associate this agent with PDNS and reproductive failure, we found most of positive cases in pigs with respiratory disease. However, further studies are necessary to investigate pathogenicity and epidemiology of this novel circovirus.