



VIRAL DISEASES

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RETROSPECTIVE DETECTION OF *PORCINE CIRCOVIRUS 3* IN PIG SERUM SAMPLES FROM SPAIN

F. Klaumann¹, G. Franzo², M. Sohrmann³, M. Drigo², M. Sibila⁴, F. Correa-Fiz⁴, J.I. Núñez⁴, J. Segalés⁵.

¹ IRTA-CReSA and CAPES, Bellaterra, Spain; ² University of Padua, Padua, Italy; ³ University of Nottingham, Nottingham, United Kingdom; ⁴ IRTA-CReSA, Bellaterra, Spain; ⁵ IRTA-CReSA and UAB, Bellaterra, Spain.

Introduction

A new Circovirus species able to infect domestic pigs has been recently described and named *Porcine circovirus 3* (PCV3). This virus was initially found in 2016 in the USA and subsequently in Asia, Europe and South America in 2017. The goal of this study was to perform a retrospective study to detect evidence of PCV3 infection in serum samples of pigs collected in the last two decades from Spain.

Materials and methods

Sera samples corresponding to 654 pigs submitted for diagnostic purposes between 1996 and 2017 were selected for this study. Total DNA was extracted and the PCV3 presence was assessed by conventional PCR. Quantification of PCV3 load on the positive samples was done by qPCR. For these positive samples, amplicons obtained by conventional PCR were purified and Sanger sequenced to obtain partial-sequences of PCV3.

Results

The first PCV3 positive sample dated from 1996 and viral genome was subsequently amplified from samples of all years, except 2005 and 2009. In total, 75 out of 654 (11.46 %) of the serum samples were PCV3 qPCR positive and no significant differences were found in prevalence across years. A low to moderate amount of PCV3 DNA copies per reaction, ranging from 10^2 to 10^6 was detected. The sequences of thirteen amplicons were sequenced and the phylogenetic analysis showed a high identity with the known PCV3 sequences and a minor diversity between the years. Even the genetic variability was globally low, the Spanish strains were quite diverse among them.

Discussion and conclusions

This is the first retrospective study performed on PCV3, indicating that this virus has been circulating in the Spanish domestic pig population, at least, since 1996. The present results suggest a lower prevalence of PCV3 than *Porcine circovirus 2*, and the obtained viral loads point out mainly to PCV3 subclinical infections.