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INFECTION DYNAMICS OF *PORCINE CIRCOVIRUS 3* IN LONGITUDINALLY SAMPLED PIGS FROM A SPANISH FARM

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Introduction

Porcine circovirus 3 (PCV3) is an emerging circovirus species that has recently been reported in different countries around the world, suggesting a widespread circulation. Previous studies related the presence of this virus in pigs with different clinical manifestations, as well in healthy animals and a higher prevalence in nursery piglets. The objective of this study was to assess the infection dynamics of PCV3 in a commercial farm from Spain.

Materials and methods

Serum samples from 47 healthy piglets were taken at 4, 8, 12, 16, 21 and 25 weeks of age. DNA from all sera was extracted and quantified by a specific PCV3 real time qPCR. The positive samples were amplified by a conventional PCR, and the amplicons were purified and Sanger sequenced.

Results

PCV3 DNA was detected in 9 out of 47 (19%) samples analyzed in this study, with cycle threshold (Ct) values between 31.8 and 39.6; those values corresponded to a viral titer ranging from 5.11×10^2 to 2.35×10^5 genome copies/mL. PCV3 PCR positivity in pigs was detected in only one of the time points tested, except for one animal that was positive in 2 different time points (4 and 16 weeks of age). Only the pig having the Ct value of 31.8 was possible to be sequenced; the phylogenetic analysis indicates that the partial PCV3 sequence found had a close identity with the already available PCV3 genome sequences.

Discussion and Conclusions

PCV3 was found in different pig sera at all tested ages, although the number of positive animals per age was fairly low in the studied farm. These results confirm that PCV3 circulated in the farm under study; however, it was not possible to ascertain a particular infection dynamics pattern, mainly due to the apparent low infectious pressure.