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Use of ORF-1 product Rep in prevention and diagnosis of porcine circovirus

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Economical loss produced by PMWS (Postweaning multisystemic wasting syndrome) is one of the most important issues that concern the pig industry. PMWS is considered a multifactorial disease in which development porcine circovirus 2 (PCV2) is essential but not sufficient. Besides PMWS, PCV2 infection has been associated with some other pathological outcomes in pigs, collectively named porcine circovirus diseases (PCVD).

PCV2 is a small non-enveloped virus belonging to Circoviridae family. Its genomic organization consists of two head to head arranged open reading frames (ORF1 and ORF2) separated by an origin of replication. ORF2 encodes the structural capsid-forming protein Cap, the main immunogenic antigen of the virus. PCV2 infection is spread in farms all over the world. However, only a small percentage (4-30%) of infected animals develops PMWS. This fact has been related to the efficiency of host immune system humoral response. In order to fight against PCV2 infection spread in farms, it is essential to vaccinate the animals and to detect, as soon as possible, a PCV2 outbreak. Our preliminary results in overexpression in *E. coli* and purification of the protein encoded by ORF-1, Rep, are hereby showed. Use of Rep in vaccines against PCV2 would improve their efficacy and would allow developing test to differentiate vaccinated from infected pigs (DIVA).

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