

**Title:** PCV-2 viral DNA(s) are Infectious for Gnotobiotic Swine –  
**NPB #02-132**

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**Abstract:** Porcine circovirus (PCV)-2 is the cause of postweaning multisystemic wasting syndrome (PMWS). The infectious virion consists of a circularized negative sense single stranded DNA encapsidated by a single virus-coded structural (nucleocapsid) protein). Virologic dogma contends that the only infectious form of the virus is the encapsidated virion (circularized ssDNA and nucleocapsid protein). In these experiments, we have shown that, contrary to “dogma”, nonencapsidated circularized Pcv-2 viral ssDNA and possibly the replicative intermediate double stranded (dsDNA) is infectious for gnotobiotic swine. The potential importance of this observation lies in the possibility that direct infectivity of viral DNAs in the presence of passive or active immunity (to nucleocapsid and thus the virion) can be accomplished in swine. Additional work must be done but the data show that viral DNAs alone are capable of disease production in swine.

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