

A NADC30-like PRRSV causes serious intestinal infections and tropism in piglets

ABSTRACT

Porcine reproductive and respiratory syndrome virus (PRRSV) causes huge economic loss to China's swine industry. Currently, a novel type 2 PRRSV, called the NADC30-like strain, is epidemic in numerous provinces of China. In this study, a NADC30-Like PRRSV strain was isolated in primary alveolar macrophage (PAM) cells from fecal samples collected from a local pig farm, which suffered severe diarrhea. A pathogenicity comparison study was conducted in 6-week-old piglets by inoculating highly pathogenic HP-PRRSV and NADC30-Like PRRSV isolates. RT-qPCR revealed detection of NADC30-Like PRRSV but not the HP-PRRSV in the intestine. PRRSV infection-related lesions were observed in the intestine were further confirmed by histopathological and immunohistochemical examination (IHC). In addition, severe virus infections were also detected by RT-qPCR. Based on clinical observation and pathogenicity experiments, we confirmed that NADC30-Like PRRSV gained more tissue tropism, especially in the small intestine. This may be the one reason explaining why NADC-Like 30 PRRSV become a major epidemic strain in China since the first outbreak in 2013.