Kansas State University Research Foundation
TECHNOLOGY LICENSING PROFILE

Novel reassortment orthoreovirus isolated from pigs with neurological symptoms for potential vaccine and diagnostic test development

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Description: Researchers at Kansas State University have isolated a novel reassortant mammalian orthoreovirus (MRV) from pigs with neurological symptoms. This novel pathogen could provide the basis for vaccine and diagnostic test development.

MRV is ubiquitous and able to infect multiple mammalian species including humans. MRV has been documented to cause diarrhea and respiratory disease in children and pigs.

A swine farm in the Midwest with approximately one thousand 3-month-old pigs experienced an event, in which more than 300 pigs showed neurological signs, without diarrhea, with approximately 40% mortality. A MRV was isolated from the diseased pigs with neurological signs.

This novel reassortant MRV virus is able to cause obvious cytopathic effects in infected cells and grow to a very higher titer. KSU researchers further performed a serological prevalence study by using a HI assay to test samples from different swine farms across the US and showed that the positive rate of the novel reassortant MRV is from 43% to 98%. These results suggest that the novel MRV may be an important pathogen for further investigation.

The pathogenicity and transmissibility of the novel reassortant MRV should be studied as a next step.

Advantages: K-State has the necessary expertise and facilities to work with this pathogen for further collaborative animal studies with a company partner.

Applications: Vaccines and diagnostic tools

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