

Virus Detection

Project Title: “Development of Real-Time PCR-Based Diagnostic Assays for Detection of Virus Infections in Horses”

University: University of Kentucky, Gluck Equine Research Center

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Results Expected: Late 2007

The Need

The increased national and international movement of horses for competition and breeding purposes has increased the risk for spread of equine viral diseases. Rapid and reliable diagnostic tests for these diseases are critical to their control and prevention. In addition, the clinical signs for many of these diseases are similar and only laboratory testing can definitively diagnose them.

However, current laboratory tests for equine viral infections use virus isolation procedures, which can be time-consuming, expensive and not very reliable.

The Goal

Other species have made use of modern nucleic acid-based assays that are more sensitive, cost-effective and less time-consuming. These assays work by identifying and amplifying viral DNA and RNA without a host organism as in virus isolation methods.

The goal of this research is “to develop a rapid, accurate, sensitive and comprehensive diagnostic assay system for the detection of economically important equine viruses using the TaqMan® fluorescent real-time polymerase chain reaction (PCR) system.”

Following procedures used to develop a PCR assay for equine arteritis virus, researchers will expand the bank of reliable assays to include these viruses: equine influenza virus, equine rhinitis A and B (B1 and B2), equine adenovirus 1 and 2, and equine herpesviruses 1, 2, 3 and 4. They also hope to develop a protocol for testing for several viruses at the same time, in a single sample.

By developing a comprehensive PCR diagnostic assay system for major equine viruses researchers hope to expedite the screening process, improve testing reliability and potentially standardize testing protocols between laboratories worldwide.

The Results

Pending