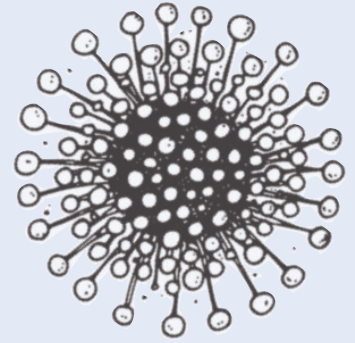


INFECTIOUS DISEASES

Key areas of investigation in equine infectious disease research include next-generation sequencing.

Vaccine Development: Active research is exploring mRNA vaccine platforms for more durable protection against evolving strains of equine influenza and herpesvirus.

Equine Herpesvirus (EHV-1/4): Research focuses on the "neuropathogenic" strains of EHV-1, which are increasing in frequency globally due to a specific point mutation in the viral DNA polymerase gene.



All the types of infectious diseases that effect horses are too numerous to name.

Chimeric VP7-VP4 MVA-Vectored Equine Rotavirus Vaccines

Mariano Carossino, Louisiana State University

In this study novel chimeric vaccinia-vectored vaccines against equine rotavirus A G3 and G14, the leading cause of foal diarrhea, will be designed and evaluated in mice (proof-of-concept) and mares.

Improving a VapA mRNA Vaccine for R. Equi in Foals

Noah Cohen, Texas A&M University

The aim of this study is to improve the design of an mRNA vaccine for foals to provide stronger, longer immunity against *Rhodococcus equi*, a leading cause of disease and death in foals worldwide.

Immunoepitidomic Profiling of R. Equi Infections

Jeroen Pollet, Baylor College of Medicine

This study uses a cutting-edge method called immunoepitidomics to understand how horse lung cells respond to harmful bacteria called *Rhodococcus equi*, the results will help toward vaccine development.



Dr. Jeroen Pollet is a great example of the crossover between human health research and equine research.

Viral respiratory infections are common in horses; most notable are equine herpesvirus infection, equine influenza, and equine viral arteritis. Grayson has funded many studies in this area that are listed under Infectious Diseases. The aim of this research is for optimal airway passage, including improving the environment of the horse, the study of equine asthma, and treatments for EIPH.

Through research, proper treatments are found, and its possible to determine how they are transmitted and how to contain outbreaks in the horse population.



Use of Equine IFNL3 mRNA for Prevention of EHV-1 and EHM

*Gisela Soboll Hussey,
Michigan State University*

This study proposes to develop IFNL3 mRNA administration in horses as a treatment for EHV-1 and EHV-1 myeloencephalopathy and as booster for EHV-1 vaccination.

Hyperimmune Plasma Decreases Rhodococcal Pneumonia

Macarena Sanz, Iowa State University

This study aims to rigorously evaluate the efficacy of R. equi-specific hyperimmune plasma in preventing pneumonia to reduce disease incidence and development of antibiotic-resistant strains.

Phage Therapy Platform for Equine Wound Infections

Lia Danelishvili, Oregon State University

This proposal aims to develop an innovative, targeted phage-based therapy to prevent and treat chronic, hard-to-heal wound infections in horses, ultimately improving recovery rates, reducing complications, and enhancing overall equine health and performance.

Development Of A Vectored Vaccine To Equine Rotavirus A

Mariano Carossino, Louisiana State University

A novel viral vectored vaccine against equine rotavirus A (G3 and G14), the leading cause of foal diarrhea, will be designed and evaluated in mares and a neonatal mouse model as proof-of-concept.