TEXAS BIOMEDICAL
RESEARCH INSTITUTE
HEALTH STARTS WITH SCIENCE

Small Animal Models

Texas Biomed Available Animal Models

About Us

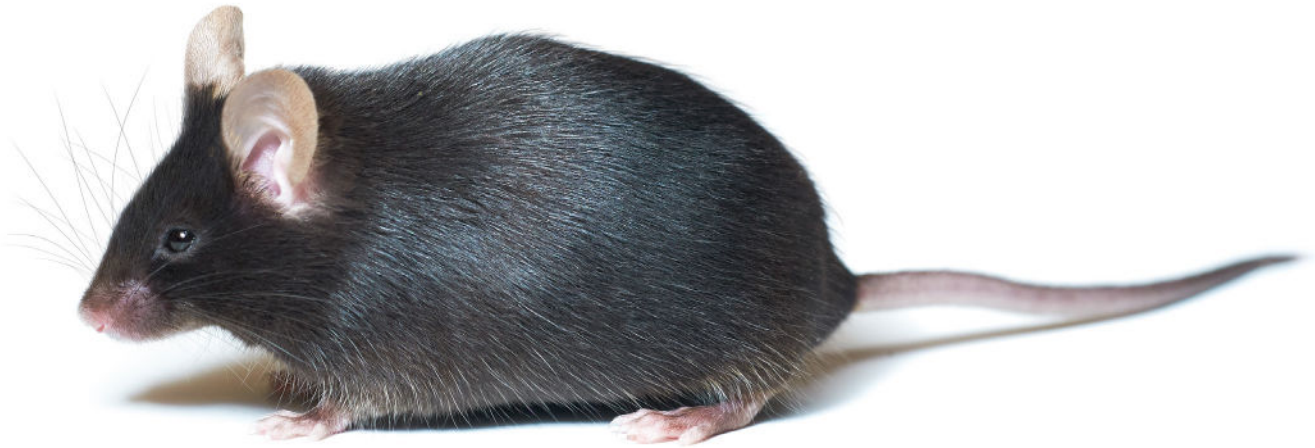
Texas Biomedical Research Institute pioneers and shares scientific breakthroughs that protect you, your families and our global community from the threat of infectious diseases. As an independent, not-for-profit, research institute with a strong history of collaborating with global partners and contributing to the world of science and human health for nearly 80 years, Texas Biomed is evolving into a one-of-a-kind, world-leader in the broad sciences of infectious diseases.

Species Available Relative to Biosafety Levels & Pathogens

The translation of basic biomedical knowledge to prevention or treatments of human diseases often requires the use of animals, tissues, or cells as models. Such models provide valuable insights into the basic biology of disease, diagnosis and treatment in humans. New and evolving animal models are needed to better recapitulate human disease phenotypes and to broaden the utility of these models for biomedical research. Measurable animal phenotypes, which may be different from or related to particular human disease conditions, can be very valuable for understanding the etiology of disease or for testing potential therapies.

At the Texas Biomedical Research Institute and the Southwest National Primate Research Center, we specialize in animal research to aid in the study of a number of infectious diseases and chronic human disease conditions such as diabetes, heart disease and cancer. We can adapt our expertise to many species for the purposes of discovery, refinement, and pre-clinical applications. Our team of highly skilled scientists, veterinarians and technical staff are available to accommodate all needs and have the necessary tools and skills to work with prospective clients in the development of new and improved platforms to suit all areas of biomedical research.

Texas Biomedical Research Institute has developed a vast array of rodent and Nonhuman Primate (NHP) animal models and interventions for Biosafety Level 2, 3 and 4 agents. We have acquired and are proficient with most of the CDC Select Agent list of pathogens, including both viral and bacterial select agents. We have a sophisticated and extremely experienced veterinary staff that is cross trained on all pathogens. Our team has the capacity to perform telemetry, intravenous serum delivery and catheterization on many of our animal models. For mice, an in vivo imaging system (IVIS) is also available.

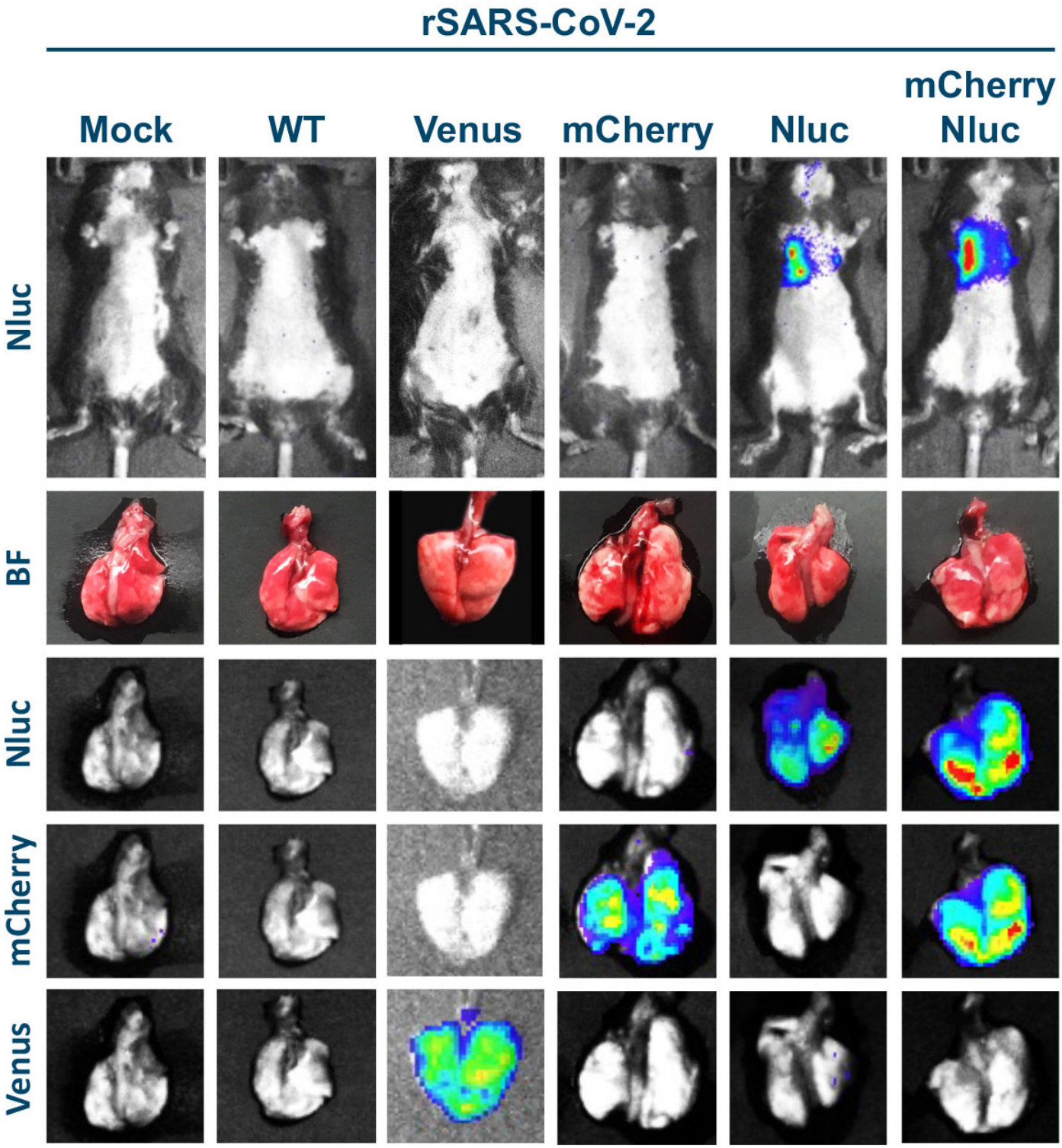


Biosafety Level-2

Disease Models and Interventions	Species	Route
Influenza A and B Viruses	Mouse	Intranasal
Zika Virus	Mouse	Intramuscular
Anaplasma phagocytophilum	Mouse	Intraperitoneal
Ehrlichia chaffeensis	Mouse	Intraperitoneal
Legionella pneumophila	Mouse	Intratracheal
Streptococcus pneumoniae	Mouse Rat	Intranasal Intratracheal
Aspergillus fumigatus	Mouse	Intranasal Intratracheal
Plasmodium falciparum (Malaria)	Mouse	Intravenous
Schistosoma mansoni (Schistosomiasis)	Hamster Mouse	Intradermal
Adenovirus (gene therapy, viral vaccines, oncolytic cancer therapy)	Mouse Rat	Intravenous Intranasal Intratumoral Intramuscular
Immunological recall studies, BCG vaccination and tuberculin skin testing	Mouse	Subcutaneous vaccination Intradermal test

Biosafety Level-3

Disease Models and Interventions	Species	Route
SARS-CoV	Mouse	Intranasal
SARS-CoV-2, including several variants of concern (VoC) and variants of interest (VoI)	hACE2 mouse Hamster	Intranasal
West Nile Virus	Mouse	Subcutaneous
Bacillus anthracis (Anthrax)	Mouse Rabbit	Intranasal Subcutaneous
Francisella tularensis (Tularemia)	Mouse	Intranasal Subcutaneous
Mycobacterium tuberculosis (susceptible, MDR, XDR, XXDR strains)	Mouse	Aerosol (low/mid/high dose) Intranasal Intraperitoneal Intratracheal Intrabronchial Intravenous
Yersinia pestis (Plague)	Mouse	Intranasal Subcutaneous



In vivo and ex vivo imaging of SARS-CoV-2: K18 hACE2 transgenic mice were mock-infected or infected with wild-type (WT), Venus, mCherry, Nano luciferase (Nluc), or both, mCherry and Nluc recombinant (r)SARS-CoV-2. Expression of Nluc was evaluated using an in vivo imaging system (IVIS). Excised lungs from same mock-infected or infected K18 hACE2 mice were monitored for Venus and mCherry fluorescent (FL) and Nluc expression using IVIS. Bright field (BF) images of the lungs are also shown.

Biosafety Level-4

Disease Models and Interventions	Species	Route
Eastern Equine Encephalitis Virus	Mouse	Intranasal
Ebola Zaire Virus	Guinea pig Mouse	Intramuscular Intranasal Intraperitoneal
Junin Virus	Guinea pig	Subcutaneous
Lassa Virus	Guinea pig	Subcutaneous
Marburg Virus	Guinea pig Mouse	Intramuscular Intraperitoneal (rodent) Aerosol
Rift Valley Fever Virus	Mouse	Intranasal