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Advancement of Vaccines and Treatments for Ebola and Marburg Virus Infections

Project Number
5U19AI142785-03

Contact PI/Project Leader
GEISBERT, THOMAS WILLIAM

Awardee Organization
UNIVERSITY OF TEXAS MED BR GALVESTON

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Description

Abstract Text

OVERALL - Project Summary/Abstract Among viruses that cause disease in humans the filoviruses, Ebolavirus and Marburgvirus, stand out for their impressive lethality. These viruses are the most deadly human pathogens known to man with reported case fatality rates of up to 90%. The recent unprecedented 2013-16 epidemic of Zaire ebolavirus in West Africa resulting in over 28,000 cases and 11,000 deaths demonstrates the ability of filoviruses to emerge in new regions. In addition to natural outbreaks, Ebolavirus and Marburgvirus are known to have been the subjects of former **biological weapons** programs and have the potential for deliberate misuse. Currently, there are no filovirus vaccines or treatments approved for human use. For these reasons Ebolavirus and Marburgvirus have recently been included as only two of eleven human pathogens on the new US Department of Health and Human Services (HHS) Tier 1 list of Category A select agents. All three Research Projects (RP) that comprise the Center focus on developing broad spectrum rapid acting vaccines or therapeutics against all medically relevant variants and species of the family Filoviridae. RP1 employs recombinant vesicular stomatitis virus (VSV)-based rapid acting vaccines, RP2 focuses on fully human anti-filovirus monoclonal antibodies, and RP3 focuses on anti-filovirus small interfering RNAs, small molecule antivirals (GS-5734 and favipiravir), and combination treatments. A unique aspect of this Center is that these approaches represent a very small cohort of medical countermeasures that have shown the ability to provide complete single injection vaccination or therapeutic protection of nonhuman primates against filoviruses. This level of readiness is a major strength and consequential advantage of our Center. The primary objective of the Advancement of Vaccines and Treatments for Filovirus Infections Center is to perform “well documented” and also “pivotal” NHP studies that will facilitate the development of products used for the broad spectrum treatment of filovirus infections. The synergy and cooperation among the three RPs, the Administrative Core, and the Biosafety Level (BSL)-4 Core is built into the Center by design as all three RPs work together to assess and combine countermeasures for enhanced efficacy. Quality system data management will be employed in both the preparation of advanced stage test articles and in the conduct of animal studies.

Public Health Relevance Statement

OVERALL - Narrative The filoviruses, Ebolavirus and Marburgvirus, are categorized as HHS Tier 1 Category A pathogens based on their risk of deliberate misuse with the most significant potential for mass casualties or devastating effects to the economy, critical infrastructure, or public confidence. There are no medical countermeasures approved for human use; therefore, this Center focuses on the advanced development of the most promising rapid acting vaccine and lead candidate postexposure treatments. These projects represent the most effective strategies that have shown single injection vaccine or therapeutic protection of nonhuman primates against filoviruses.

Project Terms

Advanced Development **Africa** **Angola** **Animals** **Antiviral Agents** **Bundibugyo virus** **Case Fatality Rates** **Case Study** **Categories** **Category A pathogen** **Cells** **Cessation of life** **Combined Modality Therapy** **Congo** **Consequentialism** **Data Management Resources** **Disease** **Disease Outbreaks** **Ebola virus** **Epidemic** **Family** **Filoviridae Infections** **Filovirus** **Goals** **Health** **Human** **Infrastructure** **Injections** **Intervention** **Journals** **Laboratories** **Licensure** **Marburgvirus** **Medical** **Microbiology** **Monoclonal Antibodies** **Nature** **Needlestick Injuries** **Pongidae** **Population** **Preparation** **Preventive vaccine** **Publications** **Readiness** **Recombinants** **Research Project Grants** **Risk** **Services** **Small Interfering RNA** **Sudan Ebola virus**

Read More

Details

Contact PI/ Project Leader

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GEISBERT, THOMAS WILLIAM

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Not Applicable

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Awardee Organization
UNIVERSITY OF TEXAS MED BR GALVESTON

City
GALVESTON

Country
UNITED STATES (US)

SCHOOLS OF MEDICINE

14

Other Information

FOA
RFA-AI-17-042

Study Section
ZAI1-LG-M(J1)

Fiscal Year
2021

Award Notice Date
19-February-2021

Administering Institutes or Centers
NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES

DUNS Number
800771149

CFDA Code
855

Project Start Date
08-March-2019

Project End Date
29-February-2024

Budget Start Date
01-March-2021

Budget End Date
28-February-2022

Project Funding Information for 2021

Total Funding
$7,043,167

Direct Costs
$5,964,014

Indirect Costs
$1,079,153

Year	Funding IC	FY Total Cost by IC
2021	NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES	$7,043,167

Sub Projects

Export

Project Number	Sub	Principal Investigator(s)/ Project Leader(s)	Organization	Fiscal Year	Admin IC	FY To Cost IC
Research Project 2: Therapeutic Human Monoclonal Antibody Treatments for Filoviruses						
5U19AI142785-03	8191	CROWE, JAMES E	UNIVERSITY OF TEXAS MED BR GALVESTON	2021	NIAID	*$2,578,594*
Research Project 1: Vaccine for Rapid Response to Filovirus Outbreak						
5U19AI142785-03	8190	ELDRIDGE, JOHN HAYWARD	UNIVERSITY OF TEXAS MED BR GALVESTON	2021	NIAID	*$963,069*
BSL-4 Evaluation Core (Core B)						
5U19AI142785-03	8189	GEISBERT, THOMAS WILLIAM	UNIVERSITY OF TEXAS MED BR GALVESTON	2021	NIAID	*$2,542,134*
Administrative Core (Core A)						
5U19AI142785-03	8188	GEISBERT, THOMAS WILLIAM	UNIVERSITY OF TEXAS MED BR GALVESTON	2021	NIAID	*$188,571*
Research Project 3: siRNA Therapy and Small Molecule Combination Treatment for Filoviruses						
5U19AI142785-03	8192	GEISBERT, THOMAS WILLIAM	UNIVERSITY OF TEXAS MED BR GALVESTON	2021	NIAID	*$770,799*

Publications

No Publications available for 5U19AI142785-03

Patents

No Patents information available for 5U19AI142785-03

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No Outcomes available for 5U19AI142785-03

Clinical Studies

No Clinical Studies information available for 5U19AI142785-03

News and More

Related News Releases

No news release information available for 5U19AI142785-03

History

No Historical information available for 5U19AI142785-03

Similar Projects

No Similar Projects information available for 5U19AI142785-03

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