Controlling the Virulence Genome of V. cholerae

Project Number
5R21AI137546-02

Contact PI/Project Leader
DAVIES, BRYAN WILLIAM

Awardee Organization
UNIVERSITY OF TEXAS, AUSTIN

Description

Abstract Text

Project Summary. Vibrio cholerae is the etiological agent of the severe diarrheal disease cholera that infects hundreds of thousands of people each year. Benign V. cholerae bacteria emerge as **pandemic** pathogens by horizontally acquiring a specific set of genetic elements that encode all major V. cholerae virulence factors. We understand the role of these acquired elements in disease, but we do not understand what uniquely allows V. cholerae to acquire and integrate control of their actions in the first place. Our objective in this proposal is to characterize the role of the first identified Vibrio specific protein affecting the ability of V. cholerae to broadly acquire and control its virulence systems. This proposal offers a major leap forward in understanding V. cholerae specific factors that allow it to acquire, control, and maintain the genetic elements needed to transition from benign strain to **pandemic** pathogen. Our results are expected to have a positive vertical impact since it will further our understanding of biology that defines the potential of V. cholerae strains to become pathogenic, which will offer insights into the selective advantage of different V. cholerae strains and suggest new paths to environmental surveillance, prevention, and treatment options. ! !

Public Health Relevance Statement

Project Narrative. Vibrio cholerae is the etiological agent of cholera, a lethal diarrheal disease that infects hundreds of thousands of people every year. We understand the role of acquired genetic virulence elements in disease, but we do not understand what uniquely allows V. cholerae to acquire and integrate their actions in the first place. Our objective in this proposal is to characterize the role of the first identified Vibrio specific protein affecting the ability of V. cholerae to broadly acquire and control its virulence systems.!

NIH Spending Category

Biodefense Emerging Infectious Diseases Genetics Infectious Diseases Prevention Rare Diseases

Project Terms

Affect Animal Model Automobile Driving Bacteria Benign Binding Biology ChIP-seq Cholera Chromosomes DNA DNA Binding Disease Disease Outbreaks Elements Etiology Gene Expression Regulation Genes Genetic Genome Goals In Vitro Infection Infection prevention Knowledge Maintenance Mediating Mobile Genetic Elements Molecular Pathogenicity Prevention Process Proteins Proteobacteria Regulation Role Surveys System Testing Vibrio Vibrio cholerae Virulence Virulence Factors Virulent cohesion diarrheal disease genetic element genome-wide insight **pandemic** disease pathogen prevent transcription factor transcriptome sequencing uptake

Details

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Not Applicable

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Thank you for your feedback!

Organization

Name
UNIVERSITY OF TEXAS, AUSTIN

Department Type
BIOLOGY

State Code
TX

City
AUSTIN

Organization Type
SCHOOLS OF ARTS AND SCIENCES

Congressional District
10

Country
UNITED STATES (US)

Other Information

FOA
PA-16-161

Study Section
Special Emphasis Panel[ZRG1-IDM-B(80)S]

Fiscal Year
2019

Award Notice Date
04-April-2019

Administering Institutes or Centers
NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES

DUNS Number
170230239

CFDA Code
855

Project Start Date **02-May-2018**

Project End Date **30-April-2021**

Budget Start Date **01-May-2019**

Budget End Date **30-April-2021**

Project Funding Information for 2019

Total Funding
$225,710

Direct Costs
$150,000

Indirect Costs
$75,710

Year	Funding IC	FY Total Cost by IC
2019	NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES	$225,710

NIH Categorical Spending

Click here for more information on NIH Categorical Spending

Funding IC	FY Total Cost by IC	NIH Spending Category
NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES	$225,710	Biodefense; Emerging Infectious Diseases; Genetics; Infectious Diseases; Prevention; Rare Diseases;

Sub Projects

No Sub Projects information available for 5R21AI137546-02

Publications

No Publications available for 5R21AI137546-02

Patents

No Patents information available for 5R21AI137546-02

Outcomes

The Project Outcomes shown here are displayed verbatim as submitted by the Principal Investigator (PI) for this award. Any opinions, findings, and conclusions or recommendations expressed are those of the PI and do not necessarily reflect the views of the National Institutes of Health. NIH has not endorsed the content below.

No Outcomes available for 5R21AI137546-02

Clinical Studies

No Clinical Studies information available for 5R21AI137546-02

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News and More

Related News Releases

No news release information available for 5R21AI137546-02

History

No Historical information available for 5R21AI137546-02

Similar Projects

No Similar Projects information available for 5R21AI137546-02

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