
COVID-19 Antiviral Therapy to Block Direct Cell Injury and Associated Tissue Damage

Grant Award Details

COVID-19 Antiviral Therapy to Block Direct Cell Injury and Associated Tissue Damage

Grant Type: Therapeutic Translational Research Projects

Grant Number: TRAN1COVID19-11975

Project Objective: To complete activities supporting the development of the COVID-19 antiviral therapy, Berzosertib, and to conduct a well prepared pre-IND interaction with the FDA resulting in correspondence from the FDA confirming agreement with the IND-enabling preclinical plan.

Investigator:

Name:	Vaithilingaraja Arumugaswami
Institution:	University of California, Los Angeles
Type:	PI

Disease Focus: COVID-19, Infectious Disease

Human Stem Cell Use: Adult Stem Cell

Cell Line Generation: Adult Stem Cell

Award Value: \$349,999

Status: Active

Grant Application Details

Application Title: COVID-19 Antiviral Therapy to Block Direct Cell Injury and Associated Tissue Damage

Public Abstract:**Translational Candidate**

Berzosertib (VE-822), a safe drug candidate for treatment against COVID-19, will be investigated.

Area of Impact

The outcome of the proposed studies will have a significant health benefit to COVID-19 affected patients.

Mechanism of Action

Our drug candidate, Berzosertib, works as a treatment against COVID-19 by blocking a critical step in virus replication. Moreover, Berzosertib is a selective inhibitor of a key cellular enzyme ATR (ataxia telangiectasia and Rad3-related protein), which can result in disabling DNA repair pathway in damaged cells. Coronaviruses are known to hijack this pathway for efficient replication, thus inhibiting the DNA repair mechanism can block viral growth.

Unmet Medical Need

Currently there is no vaccine or effective treatment to limit the COVID-19 disease caused by SARS-CoV-2 virus, which is an unmet medical need.

Project Objective

Plan to have Pre-IND meeting with FDA in 6 months

Major Proposed Activities

- Testing Berzosertib drug dose course against SARS-CoV-2 using lung stem cell-derived ALI and lung organoid culture models.
- Assessing treatment effects of Berzosertib on reducing cell death and inflammation.
- Preclinical safety and efficacy testing of Berzosertib in a human ACE-2 transgenic mouse model infected with SARS-CoV-2.

Statement of Benefit to California:

Emergence of a highly-contagious novel coronavirus, SARS-CoV-2, precipitated the current health crisis with over 3289 deaths and more than eighty thousand confirmed cases in California. Development of effective antiviral treatment targeting COVID-19 can help benefit the affected patients and reduce the impact on California's health care system and economy.

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