
Identifying a lead compound for COVID19 using high throughput screening with lung stem cell organoids

Grant Award Details

Identifying a lead compound for COVID19 using high throughput screening with lung stem cell organoids

Grant Type: Discovery Research Projects

Grant Number: DISC2COVID19-11764

Project Objective: The objective of this project is to utilize an adult lung stem cell derived lung organoid to perform a drug screen of current FDA approved compounds to identify a drug that can be repurposed for COVID19 infected patients.

Investigator:

Name:	Brigitte Gomperts
Institution:	University of California, Los Angeles
Type:	PI

Disease Focus: COVID-19, Infectious Disease, Respiratory Disorders

Human Stem Cell Use: iPS Cell

Cell Line Generation: iPS Cell

Award Value: \$149,998

Status: Active

Grant Application Details

Application Title: Identifying a lead compound for COVID19 using high throughput screening with lung stem cell organoids

Public Abstract:**Research Objective**

We propose to use a lung stem cell based organoid to identify a new compound for COVID-19 by screening a library of FDA approved compounds that could be repurposed for COVID-19 infection.

Impact

If successful, we will find a therapy to treat COVID-19 infection and prevent the lung complications that are so deadly.

Major Proposed Activities

- develop a drug screen in our COVI-19 infected lung organoid model
- run the drug screen for current FDA approved compounds that stop proliferation of COVID-19 in the lung organoid and identify which compounds work the best (hits)
- Develop a secondary screen to find which of the hits from the primary screen also reduce death of the lung cells
- Run the secondary screen to find which hits are best at preventing lung cell death and check which drug concentrations are the best at reducing viral proliferation for the hits
- Analyze all the data from the primary and secondary screens and find the hit molecule that reduces viral proliferation and prevents the lung cells from dying and works well even at low concentrations.

Statement of Benefit to California:

COVID-19 has spread rapidly across California with over 15,800 cases being diagnosed and 372 deaths so far. The pandemic shows no signs of slowing in California and 53 out of 58 counties are affected. The economic impacts are also being felt all over California and the loss of jobs and incomes is staggering. The identification of a therapy to treat this virus would have a huge impact on saving lives, preventing severe infections and allowing people to return to their normal lives.

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