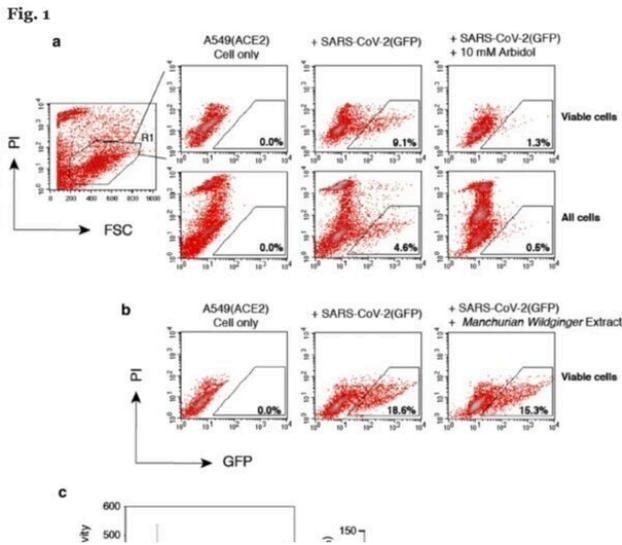


Scientists explore herbal treatment for COVID-19

4 June 2021, by Elizabeth Grisham



Credit: George Mason University

Could an over-the-counter health "shot" help fight COVID-19? George Mason University researchers think it just might.

Cell and Bioscience recently highlighted research led by Yuntao Wu and Ramin Hakami in which they examined the potential anti-coronavirus activities of an over-the-counter drink called Respiratory Detox Shot (RDS).

RDS is a remedy containing nine herbal ingredients traditionally used in Eastern medicine to manage lung diseases. The researchers reported that RDS inhibited the infection of target cells by SARS-CoV and SARS-CoV-2 pseudoviruses and by infectious wild-type SARS-CoV-2. Their results suggest that RDS might broadly inhibit respiratory viruses, such as influenza.

SARS-CoV is the viral pathogen causing Severe Acute Respiratory Syndrome (SARS), and its sister

virus, SARS-CoV-2, is the pathogen that causes COVID-19. The COVID-19 global pandemic is a major focus of researchers around the world. While effective vaccines have been developed, there is still a need for developing effective treatments. In particular, new variants of the virus are continuously emerging, and some of these variants may make the vaccines less effective.

Ramin Hakami, an associate professor in Mason's School of Systems Biology and one of the authors of the study, said that the fact that RDS is a drinkable food supplement is helpful.

"If it proves effective in vivo, it should be a treatment for COVID-19 that is easy to administer," said Hakami, who also works at Mason's National Center for Biodefense and Infectious Diseases. "That's a big plus."

For their study, Hakami, Wu, and Mason researchers Brian Hetrick, Adeyemi A. Olanrewaju, Linda D. Chillin, Sijia He, and Deemah Debbagh worked with Dongyang Yu of Virongy LLC, Yuan-Chun Ma of Dr. Ma's Laboratories Inc., and Lewis A. Hoffman of the World Health Science Organization.

The team screened extracts from approximately 40 medicinal herbs using a SARS-CoV-2 pseudovirus and human lung cells. They also screened for possible anti-SARS-CoV-2 activity of RDS.

For the study, they pretreated cells with diluted RDS and then infected the cells in the presence of RDS for four to six hours. After infection, they cultured cells in the absence of RDS and then quantified the cells to determine if viral infection was inhibited at 48 and 72 hours.

Subsequently, the researchers used the Biomedical Research Lab on Mason's Science and Technology Campus to confirm the in vitro efficacy of RDS against infectious SARS-CoV-2 virus.

The study revealed that RDS contains very potent ingredients that can destroy the infectivity of SARS-CoV, SARS-CoV-2, and influenza A virus, even at very low dosages, said Wu, a professor in Mason's National Center for Biodefense and Infectious Diseases and a study co-author. In addition, the investigators have demonstrated that RDS is effective against the SARS-CoV-2 variants in vitro.

Hetrick, a Ph.D. student in biosciences working on the study, said that the discovery was a happy surprise for him. It would be great if there are safe and effective herbal drugs available for the management of COVID-19 in the future.

Hakami is currently conducting in vivo animal studies to build on the in vitro discovery that RDS may be used as a SARS-CoV-2 treatment. He is testing RDS using K18-hACE2 transgenic mice that will be infected with SARS-CoV-2. Depending on the results, Dejjia Harmony, the sponsor of the above pre-clinical trial, may seek FDA approval to begin human clinical trials.

"This study points to the possibility of using a readily available, over-the-counter herbal beverage to provide protection against SARS-CoV-2 and influenza A infections," said Ali Andalibi, senior associate dean in Mason's College of Science. "It will also be quite interesting to see if RDS shows activity against other respiratory viruses."

More information: Brian Hetrick et al, A traditional medicine, respiratory detox shot (RDS), inhibits the infection of SARS-CoV, SARS-CoV-2, and the influenza A virus in vitro, *Cell & Bioscience* (2021). DOI: [10.1186/s13578-021-00609-1](https://doi.org/10.1186/s13578-021-00609-1)

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