

U.S. labs start tests on Wuhan coronavirus provided by CDC

By Arthur Allen

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U.S. laboratories began receiving Wuhan coronavirus specimens from the Centers for Disease Control and Prevention on Friday and prepared to test antiviral drugs that might help treat pneumonia caused by the rapidly spreading virus.

One of the candidates, an experimental drug called remdesivir, is already being tested in China, said Anthony Fauci, director of the National Institute for Allergy and Infectious Disease. Two randomized controlled trials of the drug, including several hundred patients, began Thursday in Wuhan, the center of the outbreak.

“Pretty soon we’ll get a definitive answer as to whether [remdesivir] among several drugs works,” he said at an HHS news conference. Experts say this could take a few months.

Reliable data from China could factor in any FDA decision to provide an emergency authorization for U.S. patients to take remdesivir. FDA has declined to comment on how it might consider the drug or expand the label of existing licensed antivirals.

U.S. and Chinese scientists are also testing drugs for influenza, HIV and other viral diseases on the Wuhan coronavirus.

Some critically ill Chinese patients have received remdesivir experimentally, and a 35-year-old coronavirus patient in Seattle got the drug under “compassionate use” law that enables patients to access unlicensed drugs under critical conditions. The man quickly recovered, but scientists couldn’t say whether he would have improved without the drug.

Remdesivir was developed by Gilead Sciences with the CDC and the U.S. Army and first was tested on Ebola virus in 2016. It was ineffective against that virus but seemed to cause no major side effects. And it did seem to work against various coronaviruses when tested in infected animals.

Fauci’s institute is also evaluating approved drugs such as Kaletra and interferon-beta for activity against the virus, and monoclonal antibodies, an NIH spokesperson said. Before FDA can approve any drug for human use it will presumably also require extensive animal testing.

A vaccine that Fauci’s institute is developing with Moderna Therapeutics of Cambridge, Massachusetts, has moved forward smoothly and could be ready for human testing by April, he said.

The Chinese government [has listed 58 clinical trials](#) for Wuhan coronavirus therapies, but scientists in the United States are unclear how well-designed some of the trials are.

CDC shipped the virus to several U.S. labs late this week in the form of liquid cell cultures. The first step is to test its growth in various cells and then see how it responds to antiviral drugs, said Rachel Graham and Lisa Gralinski, professors of epidemiology at the University of North Carolina who work on coronaviruses.

They bred special mice that can be infected with coronaviruses following the 2003 SARS epidemic and had previously planned to destroy the colony only a few days before the Wuhan epidemic began. The

mice have since given birth to pups that can be infected with the virus within six weeks to study the pathogen and its response to different drugs.

Eventually, the NIH may be able to set up a clinical trial that tests various therapies, possibly with a placebo arm in which patients receive intensive care but no anti-viral drugs, said Andrew Pavia, chief of pediatric infectious diseases at the University of Utah. A similar trial during the Ebola outbreak last year was successful in finding two good candidates.

Sarah Owerhohle and David Lim contributed reporting.

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