When the coronavirus pandemic shook up Ansun Biopharma Inc.’s clinical-trial plans, company leaders knew they had to change course.

San Diego-based Ansun, which has raised $185 million in venture capital since 2018, develops drugs for viral respiratory diseases. One medicine it is testing in late-stage clinical trials could help hospitalized adults with weakened immune systems who have parainfluenza infections, which cause respiratory illnesses.

But when the crisis emerged early this year, hospitals involved in the trial shifted their focus to the new coronavirus. While that study remains ongoing, hospitals haven’t been enrolling parainfluenza patients, Chief Medical Officer Stanley Lewis said.

So Ansun decided to direct the drug at Covid-19, the disease caused by the new coronavirus, and is now running a U.S. trial that it hopes will reprise the impact that researchers saw in a study of the medicine in four patients in China.

“It was clear that when Covid came onto the scene, it was going to take all the air out of the room,” Dr. Lewis said. “We had to pivot.”

Ansun—backed by Lilly Asia Ventures, Sinopharm Healthcare Fund and others—is one of several startups joining the fight against the new coronavirus. Others include biotechnology companies such as Celularity Inc., Partner Therapeutics Inc. and AbCellera Biologics Inc.

As the pandemic took hold, Ansun executives believed their drug, DAS181, could be a weapon against the new coronavirus because an earlier collaboration with the U.S. Centers for Disease Control and Prevention had provided evidence through lab studies that the medicine could
battle another type of coronavirus, Middle East respiratory syndrome, or MERS, according Chief Executive Nancy Chang.

Dr. Chang decided to test DAS181 in a study of Covid-19 patients in China who needed supplemental oxygen to breathe but had yet to be put on a ventilator. After getting the go-ahead from Chinese regulators, researchers dosed the first patient in late February, Dr. Lewis said.

Participants in the study at Renmin Hospital of Wuhan University had pneumonia and low blood-oxygen levels. They received the inhaled drug over 10 days. After 14 days, all four no longer needed supplemental oxygen and all four have since recovered, according to Dr. Lewis. Ansun plans to publish the research in a peer-reviewed journal, he said.

Results of the study prompted Ansun in late March to seek regulatory permission to start a larger U.S. trial. Because executives suspected the drug could thwart several viral threats, they had designed the parainfluenza study in a way that would make it easy to add patients with other viral diseases into the trial, Dr. Lewis said.

As a result, Food and Drug Administration officials let Ansun add Covid-19 patients into the trial already ongoing in parainfluenza. That spared Ansun from the longer regulatory process of starting a completely new trial.

“We didn’t see Covid coming,” Dr. Lewis said. But in this trial, “it was a fortuitous design.”

DAS181 is a sialidase enzyme that works in various ways. When used against parainfluenza, it removes sialic acids from the lung surface so that the virus cannot bind to lung cells and infect them, according to Ansun.
In patients in the later stages of Covid-19, the drug appears to have a moderating influence on the immune system, so that fewer inflammation-promoting macrophages congregate in the lungs and release cytokine molecules that cause potentially deadly inflammation, according to Dr. Lewis.

Other companies are also testing medications to see if they can prevent Covid-19 patients from worsening. Partner Therapeutics, for example, is betting its protein therapy will improve lung functioning so that patients won’t need to go into intensive care, according to the company.

Ansun’s Drs. Lewis and Chang have developed drugs before. Dr. Chang previously led biotechnology company Tanox Inc., where Dr. Lewis was director of drug development. Tanox teamed up with Genentech Inc. Novartis AG to develop Xolair, approved by the FDA in 2003, which treats allergic asthma and chronic hives that occur without a known cause. Tanox went public in 2000 and was acquired by Genentech in 2007 for $919 million.

Ansun’s study of U.S. patients with severe Covid-19 pneumonia began in early April and will look to enroll 106 patients. Like participants in the study in China, patients in this trial require supplemental oxygen. Ansun hopes the drug will clear their symptoms so that fewer people will need to go on a ventilator.

If the drug can stop patients from needing a ventilator, Dr. Chang said, “that will give them the best benefit of all.”