Molnupiravir blocks COVID progress within 24 hours

Treating novel coronavirus infection in ferrets with Molnupiravir completely suppressed virus transmission among the mammals within 24 hours. VulcanChem.

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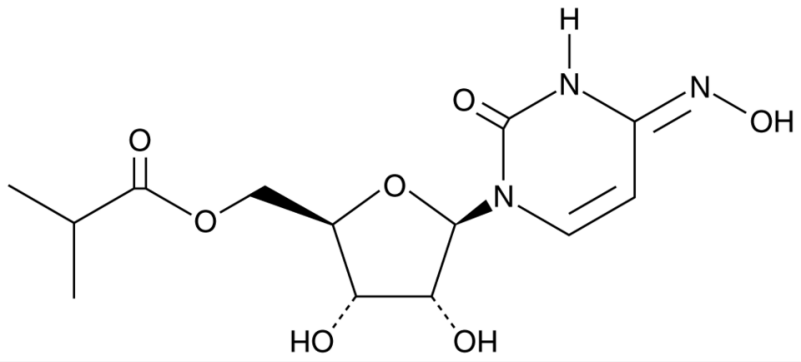

Molnupiravir

PASADENA, CALIFORNIA, UNITED STATES, December 10, 2020 /EINPresswire.com/ -- Researchers in the Institute for Biomedical Sciences at Georgia State University, led by Dr. Richard Plemper, found treating a SARS-CoV-2 infection with a new antiviral drug, MK-4482/EIDD-2801 or Molnupiravir, completely suppresses virus transmission within 24 hours. Molnupiravir is an oral antiviral drug that was originally developed for the treatment of influenza. MK-4482/EIDD-2801 consists of the nucleoside analog N4-hydroxycytidine (NHC). Molnupiravir has been evaluated against coronaviruses (CoVs) including SARS-1, MERS-CoV, and SARS-CoV-2.

In the study published in Nature Microbiology, the research team repurposed MK-4482/EIDD-2801 against SARS-CoV-2 and used a ferret model to test the effect of the drug on halting virus spread. The researchers infected ferrets with SARS-CoV-2 and initiated treatment with MK-4482/EIDD-2801 when the animals started to shed virus from the nose. When they co-housed those infected and then treated source animals with untreated contact ferrets in the same cage, none of the contacts became infected. "We believe that ferrets are a relevant transmission model because they easily spread SARS-CoV-2, but for the most part they do not develop a serious disease, which is very similar to the spread of SARS-CoV-2 in young adults," he said. Dr. Robert Cox, a postdoctoral fellow in the research group and co-lead author of the study.

If this ferret-based data is translated into humans, Covid-19 patients treated with the drug could become non-infectious within 24 hours of starting treatment. Molnupiravir is currently in

advanced phase II / III clinical trials. It is being tested in three different doses every 12 hours for five days in patients with SARS-CoV-2. This is significant as interrupting community transmission of covid-19 until mass vaccination is available is paramount to mitigating the catastrophic consequences of the pandemic, scientists said.

Molnupiravir is the isopropylester prodrug of [N4-hydroxycytidine]. With improved oral bioavailability in non-human primates, it is hydrolyzed in vivo, and distributes into tissues where it becomes the active 5'-triphosphate form. The active drug incorporates into the genome of RNA viruses, leading to an accumulation of mutations known as viral error catastrophe. Recent studies have shown EIDD-2801 inhibits replication of human and bat coronaviruses, in mice and human airway epithelial cells. Other related compounds include Beta-D-N4-Hydroxycytidine, Sonidegib, Enasidenib, etc.

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