



Novel COVID19 Treatment

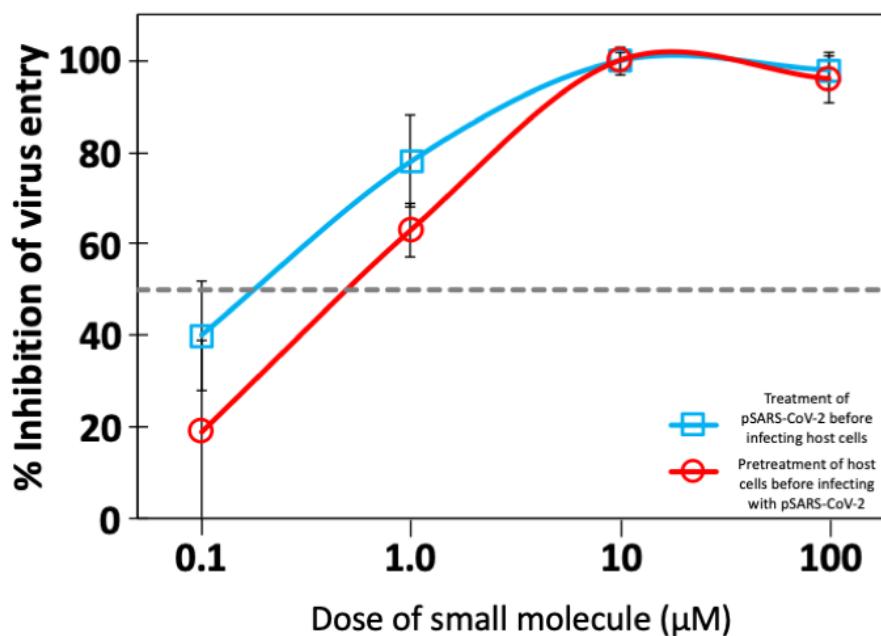
A synthetic, small molecule for the treatment of SARS-CoV-2 and other enveloped viruses

COVID19 is the most recent global pandemic caused by SARS-CoV-2, an enveloped virus. SARS-CoV-2 has a long incubation phase and can be spread during the asymptomatic phase. Currently, there is no cure. COVID19 causes a variety of viral symptoms, the most severe being organ damage, organ failure, and death. Currently treatments for the disease includes supportive care to manage symptoms, and supplemental oxygen or mechanical ventilation for severe cases. Emergency authorization has been granted for remdesivir and dexamethasone for severe cases, but effectiveness has not been fully determined. There is a strong clinical need for alternative treatments specific to SARS-CoV-2 to prevent infection early on during the asymptomatic phase.

The technology

The SARS-CoV-2's method of action requires the binding of a Spike glycoprotein (SgP) to ACE-2 receptors found on the cellular membrane of the host organism. The current literature shows that this process of virus fusion to host is also mediated by heparin sulfate proteoglycans (HSPGs) that capture and stabilize the virus in order to hijack cellular transport mechanisms and move into the cell.

This is a unique compound that possesses high specificity to one of the Spike glycoprotein (SpG) binding domains that help SARS-CoV-2 internalization into a human host cell. The compound selectively interferes with viral glycoproteins binding to heparan sulfate (HS) receptor present on human host cell surface. The unique receptor profile is associated with positive pharmacological effects in a variety of in vitro efficacy experiments involving cell-to-cell fusion and viral entry using pseudo SARS-CoV-2. Therefore, this drug is a potential candidate for COVID-19 treatment and a variety of enveloped viruses that require HSPG receptors in their pathology.



Benefits

- » Potent inhibition of viral fusion
- » Sub micromolar doses

Applications

- » SARS-CoV-2
- » Coronaviruses
- » Cytomegalovirus
- » Herpes simplex virus
- » Dengue virus
- » Hepatitis E virus

Patent status:

Patent pending: U.S. and foreign rights are available.

License status:

This technology is available for licensing to industry for further development and commercialization.

Category:

Biomedical

VCU Tech #:

20-082F

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External resources:

[Elste et al. 2020](#)

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