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Asthma drug can block SARS-CoV-2 protein: IISc researchers

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The US FDA drug montelukast has been around for more than 20 years



According to a new study by researchers at the Indian Institute of Science (IISc) in Bengaluru, a drug used to treat asthma and allergies can bind to and block a crucial protein produced by the virus SARS-CoV-2 and reduce viral replication in human immune cells.

Approved by the US Food and Drug Administration (FDA), the drug, called montelukast, has been around for more than 20 years and is usually prescribed to reduce inflammation caused by conditions like asthma, hay fever and hives.

In the study published in *eLife,* the researchers show that the drug binds strongly to one end ('C-terminal') of a SARS-CoV-2 protein called Nsp1, which is one of the first viral proteins unleashed inside the human cells. This protein can bind to ribosomes – the protein-making machinery – inside our immune cells and shut down the synthesis of vital proteins required by the immune system, thereby weakening it. Targeting Nsp1 could therefore reduce the damage inflicted by the virus.

The team plans to work with chemists to see if they can modify the structure of the drug to make it more potent against SARS-CoV-2. They also plan to continue hunting for similar drugs with strong antiviral activity.