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Singapore finds effective therapeutic for killing wide range of viruses

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May be an answer to fighting a range of virus infections, such as SARS-CoV-2, Hand, Foot and Mouth Disease and Influenza



Peruvoside, a plant-based compound that is commonly used to treat heart failure, has been discovered to be able to prevent up to 12 medically important viruses, all originating from different virus families. These viruses are of medical significance as they cause prevalent viral diseases, such as SARS-CoV-2, Hand, Foot and Mouth Disease (HFMD) and Influenza.

When modified, Peruvoside acts on GBF1, a protein that is crucial for the replication and production of virus in the body, by disabling its functionality so that production of more virus is stopped.

Led by Associate Professor Justin Chu from the Infectious Diseases Translational Research Programme and Department of Microbiology and Immunology at the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine), the study aimed to find a therapeutic that is effective in killing a wide range of viruses.

Thousands of compounds were screened using a high-throughput screening test, normally used in drug discovery processes. Peruvoside was identified as the ideal candidate and was found to possess broad-spectrum antiviral properties to prevent the replication of a number of infectious viruses, with minimal side effects.

In their study, the team evaluated the efficacy of Peruvoside in fighting Enterovirus, the virus that causes HFMD. At a treatment dosage level of 0.5 milligrams, the results showed 100% efficacy in protection with no detectable traces of virus in tissues, the region usually affected by the Enterovirus.

For the next stage of this study, the team aims to modify and improve the pharmacological and safety profile of Peruvoside so that it can be eligible for clinical trials and safe for consumption.