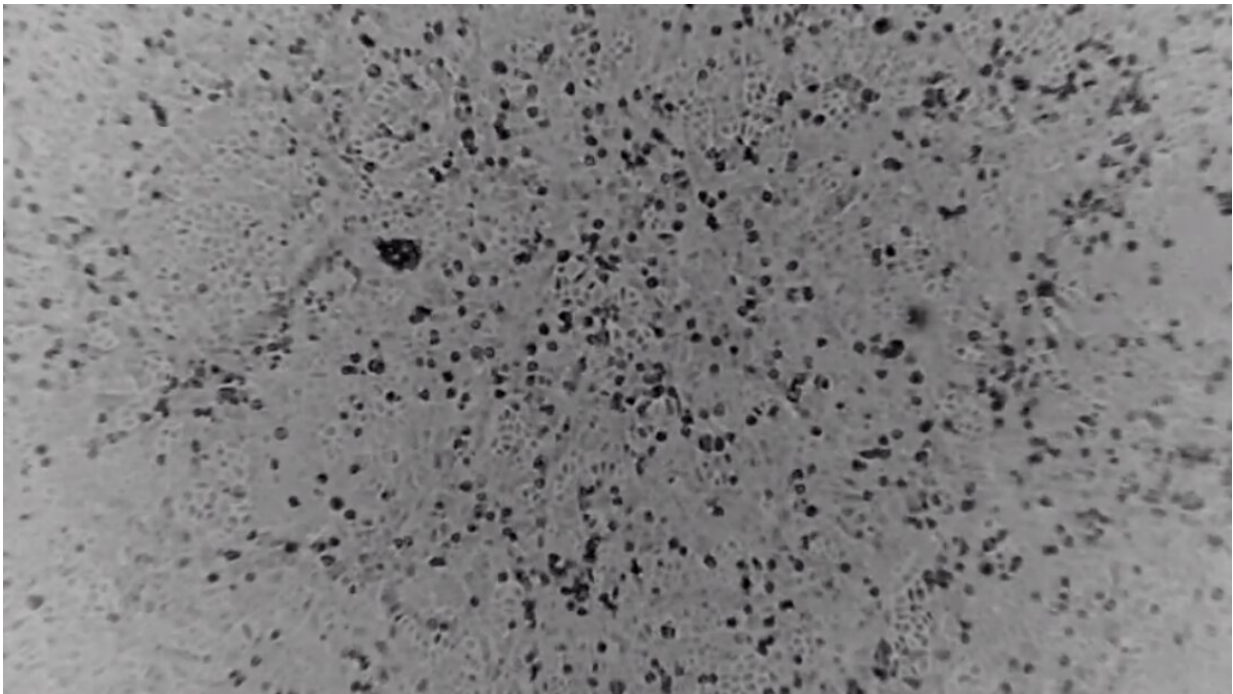


Nasal spray to fight COVID-19 heads to clinical trial

December 28 2021



The coronavirus in culture. Credit: Dr Julian Druce VIDRL, Peter Doherty Institute for Infection and Immunity.

An at-home nasal spray treatment for COVID-19 will be put to the test by Melbourne biomedical researchers, as the University of Melbourne and Monash University receive \$4.2 million to establish a six-month clinical trial lead by Northern Hospital in collaboration with Oxford University.

Heparin, a widely used blood-thinning drug to treat or prevent blood clots forms the base of the nasal [spray](#) treatment that is simple to administer, stable at room temperature and available globally.

Director of Lung Health Research Centre, University of Melbourne Professor Gary Anderson said the spray will be easy to use, with two puffs in each nostril, three times a day.

"Basic science studies revealed that intranasal heparin may be an effective way to prevent COVID-19 infection and spread. COVID-19 first infects cells in the nose, and to do that the virus must bind to Heparan Sulfate on the surface of nasal cells lining the nose," Professor Anderson said.

"Heparin—the active ingredient in our spray—has a structure that is very similar to Heparan Sulfate, so it behaves as a 'decoy' and can rapidly wrap around the virus's spike protein like a python, preventing it from infecting you or spreading the virus to others.

"Importantly, this nasal spray should prove effective for all COVID-19 variants because the Heparan Sulfate binding site is essential for infection, and is likely to be preserved in new variants. Heparin binds avidly to the Omicron variant currently sweeping through the country."

Anderson celebrated the efforts of the University and affiliated institutes, adding that this work is a great example of how the University can catalyze translation research by speeding the passage of basic science into the hands of clinicians to find solutions in the COVID-19 pandemic.

"In this project, the Bio21 Molecular Science and Biotechnology Institute, Peter Doherty Institute for Infection and Immunity and University affiliated hospitals Northern, Royal Children's and St Vincent's all contributed their expertise to get this treatment to the

clinical trial stage. We also worked with colleagues at Monash Institute of Pharmaceutical Sciences on the formulation and spray device and Oxford University," he said.

"It is now essential that we test the actual effectiveness of Heparin in the rigorously designed, double blinded, placebo controlled clinical trial as this will provide definitive evidence. If the treatment is proven to work in the setting of preventing progression and spread within homes, it would support using the spray to protect highly vulnerable populations such as the elderly, pregnant women, and those with weak immune systems.

"It may also prove useful to protect our front-line health care workers from illness and to preserve capacity in the health care system. It must be stressed that heparin would be used on top of vaccination and would not replace vaccines."

The IntraNasal HEpaRin Trial (INHERIT) will be led by the Northern Hospital, using an innovative monitoring and treatment platform that allows researchers to access and remotely treat patients within 24 hours of their diagnosis, speeding up treatment and providing monitoring through portable oximeter devices that measure oxygen levels in blood.

Northern Health medical divisional director Don Campbell sparked the innovation, entertaining the possibility that the blood-thinning drug [heparin](#) could stop the virus growing in cells the early months of the pandemic.

With the help of University of Melbourne, Monash and Oxford University researchers, the team has confirmed Heparin can block the transmission of COVID-19 and prevent infection—making way for clinical trials to begin.

Clinical trials are expected to commence in the first quarter of 2022.

Provided by University of Melbourne

Citation: Nasal spray to fight COVID-19 heads to clinical trial (2021, December 28) retrieved 8 May 2024 from <https://medicalxpress.com/news/2021-12-nasal-covid-clinical-trial.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.