

3M and MIT Researchers Developing a Rapid Diagnostic Test for COVID-19

The goal is a new, highly accurate, mass-produced low-cost diagnostic device that delivers results in minutes.

ST. PAUL, Minn.--(BUSINESS WIRE)-- To help the world respond to COVID-19, 3M and researchers at MIT are testing a new rapid test that detects the virus. Accelerated research is underway to learn if a simple-to-use, diagnostic device can produce highly accurate results within minutes and is feasible to mass manufacture.

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The U.S. National Institute of Health selected the rapid COVID-19 test for accelerated development and commercialization support, after rigorous review by an expert panel. The test is in the Rapid Acceleration of Diagnostics Tech (RADx Tech) program, an aggressively-paced COVID-19 diagnostics initiative from the NIH's National Institute of Biomedical Imaging and Bioengineering.

"We are excited to collaborate with Professor Hadley Sikes and the team at MIT. Our approach is ambitious, but our collective expertise can make a difference for people around the world, so we owe it to ourselves and society to give it our best effort," said John Banovetz, 3M Senior Vice President for Innovation and Stewardship and Chief Technology Officer. "This is another step demonstrating 3M's leadership in the fight against COVID-19. We are seeking to improve the speed, accessibility and affordability of testing for the virus, a major step in helping to prevent its spread."

The test would detect viral antigens and deliver highly accurate results within minutes via a paper-based device. The test could be administered at the point-of-care and would not need to be sent to labs for testing.

This effort draws on 3M's deep technological expertise in biomaterials and bioprocessing along with the company's expertise in global medical device manufacturing. The 3M team is led by scientists, manufacturing and regulatory experts from its corporate research laboratories and health care business group.

The research team at MIT is led by Professor Hadley Sikes at the Institute's Department of Chemical Engineering. The Sikes lab specializes in the creation and development of molecular technologies to improve the performance of rapid, cellulose-based protein tests.

"There is a pressing need for a highly scalable rapid test," Sikes said. "We are working with our colleagues at 3M to overcome the challenges to move this research from lab to impact, and find an innovative path forward to manufacture it at scale. Joining forces with 3M and the NIH has greatly enhanced our collective efforts toward swift detection of the virus, and a potential tool to help mitigate and contain this public health crisis."

The teams at 3M and MIT believe a diagnostic test can be deployed once validated. Manufacturing equipment can be scaled to produce millions of units per day.

The team is prepared to collaborate with the government's RADx Tech program to demonstrate the test's capability and to deploy it as quickly as possible. RADx Tech's phased innovation funnel is initially supporting a four-week period of intense research to demonstrate the test concept works and can be commercialized on a large scale. The project received \$500,000 in validation funding from RADx Tech and is eligible for further investment in later stages of the development funnel.

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