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Rutgers researchers eye new saliva test breakthrough: A potential coronavirus and flu combo

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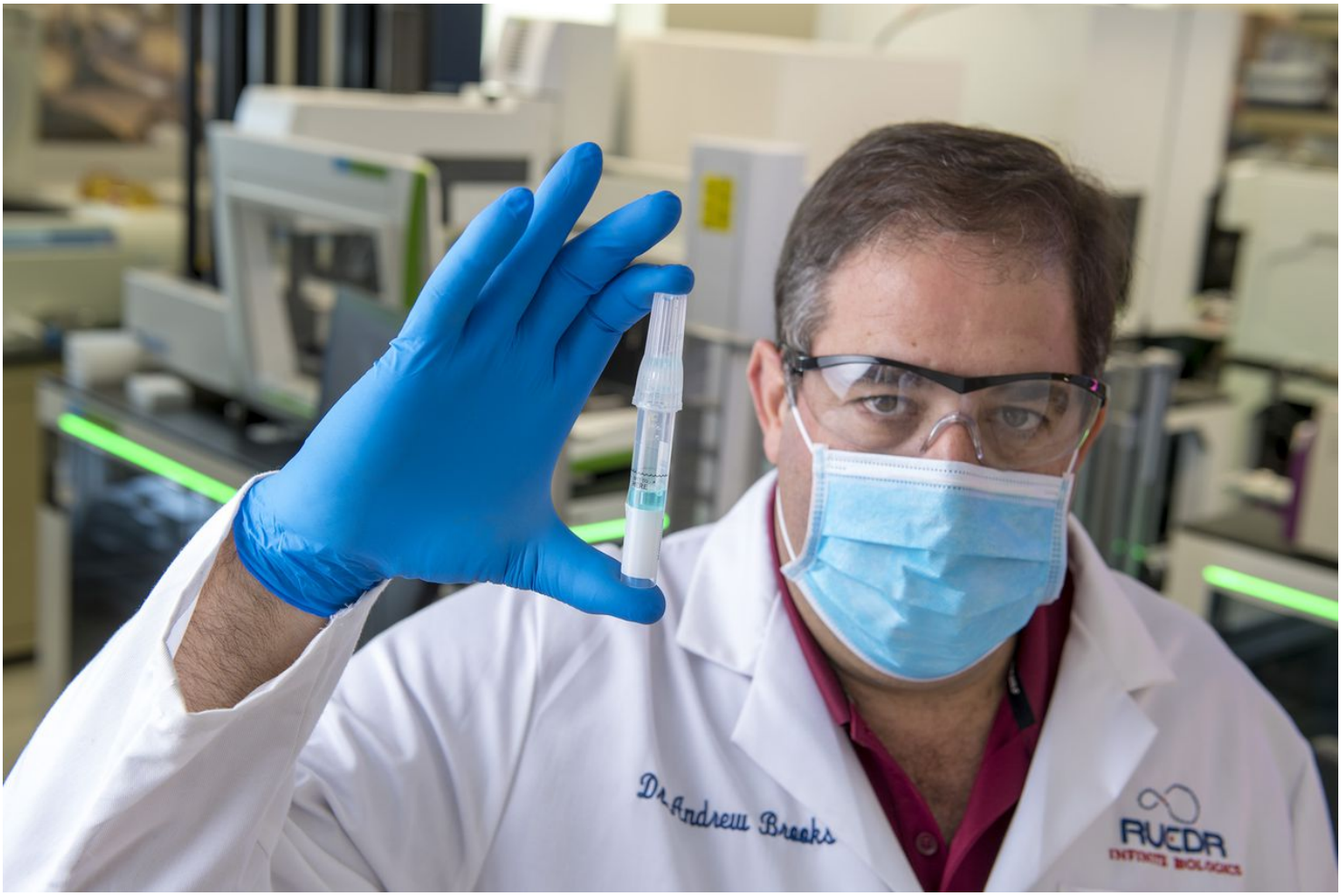

Dr. Andrew Brooks, chief operating officer at RUCDR Infinite Biologics, is processing Spectrum saliva collection devices. They enable a much broader population to be screened for COVID-19 without putting health care professionals at risk.

By Matthew Stanmyre | NJ Advance Media for NJ.com

Months after developing one of the nation's first saliva-based coronavirus tests, researchers at Rutgers University are closing in on their next breakthrough: A saliva test for both COVID-19 and the flu.

The research is being conducted at RUCDR Infinite Biologics — a unit of Rutgers' Human Genetics Institute of New Jersey — the same lab that gained federal approval in April for a coronavirus saliva test. The test allows people to collect their own samples at home and send them to be processed.

Andrew Brooks, chief operating officer and director of technology development at RUCDR, said the lab hopes to have a test approved by the fall.

And just in time for flu season.

A potential coronavirus and influenza saliva test would mark a crucial development with flu season looming — considering the viruses share similar characteristics and symptoms. The test would be able to indicate if an individual has been infected by COVID-19, the flu, or neither.

"There are other companies working on different panels, but this would be the first saliva-based COVID and influenza test," Brooks said. "We're gearing up, and we would like for it to be ready by the start of the flu season. Maybe even earlier. We're not going to delay getting this."

Last month, Gov. Phil Murphy announced the state had started using the Rutgers saliva test in its broad testing initiatives, allowing it to increase New Jersey's testing capacity by 30,000 people a day and providing results within 48 hours.

Across the nation, testing continues to be a major issue, with some states reporting a lack of test kits or slow turnarounds on results.

Last week, another saliva-based coronavirus test developed at Yale University garnered widespread attention when it received emergency authorization from the Food and Drug Administration. The NBA and the National Basketball Players Association helped fund the development, and Yale administered the saliva test to a group that included NBA players and staff leading up to the league's return to play, ESPN reported.

When compared to nasal swab tests from the same group, the results almost universally matched.

The Yale test, known as SalivaDirect, is designed for widespread public screening and costs $4 to $20, ESPN reported. The Rutgers test has cost individual consumers up to $150, but Brooks said the costs are not an "apples to apples comparison."

"We're not offering the test commercially to people that we would put a price on it," he said, adding that telehealth partners and diagnostic labs who partner with RUCDR are setting the cost.

The Yale and Rutgers tests are similar, but Brooks said there are a few key differences. In particular, the Yale test cuts out a step of the Rutgers test, reducing the processing time. The Yale test allows patients to spit in a tube without a preservation agent for the saliva, then the PCR — or polymerase chain reaction — is performed on the sample.

The Rutgers test has a preservation agent that mixes with the saliva and chemically stabilizes the ribonucleic acid that's extracted from the sample. The preservation agent also renders the virus inactive so it's safer to handle in the lab. The step adds about 30 minutes and $5, but the time is worth it for the accuracy of the result, Brooks said.

"If you look at the performance of the test, you'll see that the extraction of nucleic acid is more sensitive," Brooks said.

Rutgers also is working on pooling strategies for a screening application, as well as studying how effective its current test would be in an asymptomatic population, Brooks said. The lab is hoping for continued developments, along with the coronavirus and flu combo test, before the end of 2020.

"We've stayed with our core approach," Brooks said. "We've scaled our lab. We've brought on some great telehealth partners to make this test available for walk-ups, drive-thrus, at-home testing."

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