RE:

From:

"Jarvis, Mark" <mark.jarvis@pco-bcp.gc.ca>

To:

"Blanchard, Dominique" <dominique.blanchard@pco-bcp.gc.ca>

Cc:

"Wong-Fortin, Bonny" <bonny.wong-fortin@pco-bcp.gc.ca>, "Babad, Luke" <luke.babad@pco-bcp.gc.ca>

Date:

Fri, 09 Oct 2020 09:38:17 -0400

Yes, it is a different category of test: gene editing CRISPR (Clustered Regularly Interspaced Palindromic Repeats) tests.

It is similar to PCR-based SARS-CoV-2 ones that are currently in use, but uses different reagents offering a potential alternative where there are shortages of the chemicals needed.

Effective gene editing tests are able very quickly and very precisely identify a gene, or basically a portion of DNA sequence, corresponding to a virus.

While there had been hope to develop a saliva version of the tests, the current results are based on samples collected via nasopharyngeal swabs.

People have been working on these tests since April, but up until now there had not been a breakthrough this significant. That being said, these are still preliminary results in that the number of samples tested is low.

The promise of CRISPR is that it can provide a way to have cheap, decentralized testing for a large fraction of the population because it doesn't require bulky instrumentation and the reagents themselves are quite cheap.

Initial efforts were aiming to keep costs for the clinical-lab-based version of the CRISPR test to less than $1 US per test and the cost of a home-based test to under $5 US.

These tests are still not as sensitive as PCR tests but this new study is suggesting that they are still highly accurate and a lot faster (5 minutes per test vs up to a day or more).

The article I sent notes two other key points:

- these tests also provide an indication of the amount of virus a patient has allowing doctors to tailor treatment decisions to each patient's condition; and

- another key challenge that they have overcome that limited initial CRISPR tests. Initially the tests required researchers to first amplify any potential viral RNA before running it through the diagnostic to increase their odds of spotting a signal. That added complexity, cost, and time, and required additional chemical reagents.

From: Blanchard, Dominique <Dominique.Blanchard@pco-bcp.gc.ca>
Sent: Thursday, October 8, 2020 9:38 PM
To: Jarvis, Mark <Mark.Jarvis@pco-bcp.gc.ca>
Cc: Wong-Fortin, Bonny <Bonny.Wong-Fortin@pco-bcp.gc.ca>; Babad, Luke <Luke.Babad@pco-bcp.gc.ca>
Subject: Re:

Is this a third category of test (antigen, PCR, and this?)

Sent from my iPhone

> On Oct 8, 2020, at 9:27 PM, Jarvis, Mark <Mark.Jarvis@pco-bcp.gc.ca> wrote:
>
> Science is reporting on a new gene editing test with 5 min turnaround test.
>
> https://www.sciencemag.org/news/2020/10/new-test-detects-coronavirus-just-5-minutes