

INNOVATIONS IN COVID-19

Bridging opportunities
at Oswaldo Cruz Institute

DEVELOPMENT OF A COST-EFFECTIVE REAL-TIME PCR ASSAY TO THE MOLECULAR DIAGNOSIS OF COVID-19

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COORDINATOR

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RESEARCH AREA

Diagnostic

DEVELOPMENT STAGE

Level 2 - TRL - Technology concept and/or application. MRL - Manufacturing concepts identified.

PROPOSITION / APPLICATION

The possibility of obtaining the complete SARS-CoV-2 genome at the beginning of the pandemic facilitated the development of specific primers and standardized laboratory protocols for COVID-19. After the publication of the first RT-PCR assay protocols, the WHO produced a technical manual, recommending 7 RT-PCR in house assays in real time, and all using systems with hydrolysis probes designed for the different regions of the viral genome. Of these, only 1 assay present an internal human control and capable of monitoring the quality of the nucleic acid extraction and validating the true negative result. Based on these reactions, a variety of molecular diagnostic kits are being produced and validated in record time. Even so, the production of these kits is not fast enough to cover the immense demand for diagnostics worldwide. In view of this, investment in alternative technologies, which are of lower cost and can assist in the diagnosis of COVID-19, is less dependent on imported products and inputs.

INNOVATION

Development of a molecular assay for the diagnosis of Covid-19 with sensitivity and clinical specificity equivalent or superior to the tests recommended by WHO, without using hydrolysis probes. As it does not use hydrolysis probes, the test is about 10 times cheaper and can be carried out with most of the inputs purchased in the national market.

OPPORTUNITY

To contribute to the development of a more economical alternative test and less dependent on imported products and inputs, which can assist in the molecular diagnosis of COVID-19.

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