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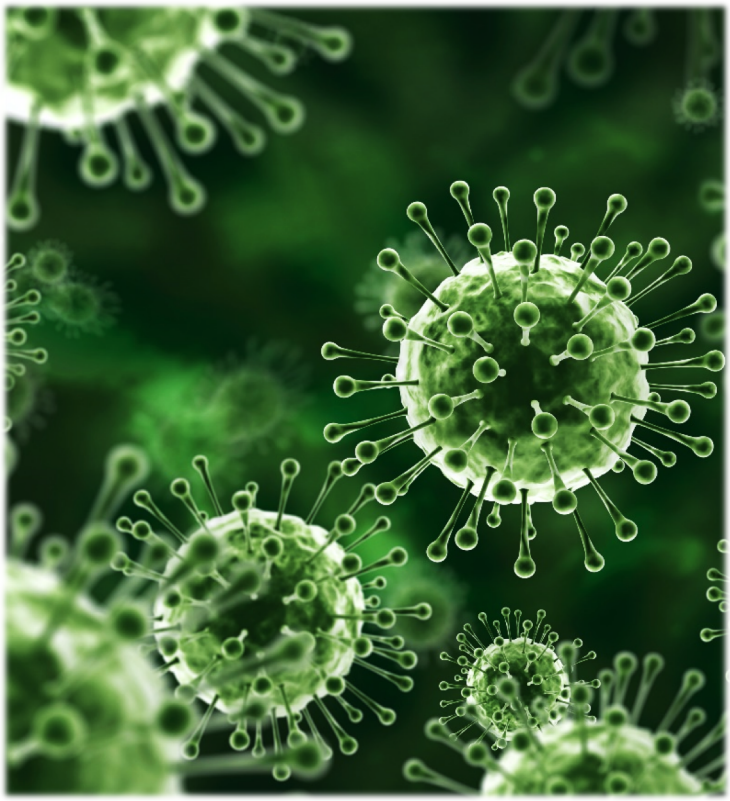
VereCoV™



Detects and Identifies:
2019 Novel Coronavirus (2019-nCoV) and Severe Acute Respiratory Syndrome-related Coronavirus (SARS-CoV)

Rapid Detection and Identification of 2019-nCoV and SARS-CoV

Coronaviruses (CoV) are a large family of viruses with some causing less severe disease, such as the common cold displaying mild symptoms of fever, cough and shortness of breath, and others more severe disease including Severe Acute Respiratory Syndrome (SARS-CoV) and the most recent, 2019 Novel Coronavirus (2019-nCoV). 2019-nCoV can be fatal, particularly in older people, and people with pre-existing medical conditions appear to be more vulnerable to becoming severely ill with 2019-nCoV.

Chinese authorities first identified 2019-nCoV in late 2019 and discovered it to be approximately 70% similar to SARS-CoV in genomic sequence. Given high transmission rate of SARS-CoV, it is possible that 2019-nCoV could also cause high incidences of transmission from person to person, usually after close contact with an infected individual. This could easily escalate to a global outbreak, and as such, the need for an accurate and reliable test for surveillance and detection is essential.

To meet this need, Veredus offers a new solution: VereCoV™, a portable Lab-on-Chip application. Together with the VerePLEX™ Lab-on-Chip Platform, it is capable of detecting, differentiating and identifying 2019-nCoV and SARS-CoV in a single test.

Specifications

3 Gene Targets
- ORF1ab
- Spike (S)
- Nucleocapsid (N)

Multiple Detection Probes (with duplicates)
- 2019-nCoV Specific Probes
- SARS-CoV Specific Probes

Internal Controls
- PCR - Positive Amplification Control
- Hybridization - Orientation Probes, Positive Control Probes, Negative Control Probes

Specimen Types*
- Respiratory Swab (nasopharyngeal, nasal, throat)
- Throat Aspirate

Every chip is bar-coded and measures 2.54 cm x 7.62 cm

*As recommended by World Health Organization (WHO)

VereCoV™

Robust and Time-tested Technologies:
Polymerase Chain Reaction (PCR) and microarray gives the VereCoV™ chip the accuracy and sensitivity needed to provide answers in the shortest possible time.

Breakthrough Innovation:
The integration of two powerful molecular biological technologies enables the development of the VereCoV™ chip into a fast PCR-microarray based diagnostic test using the VerePLEX™ Biosystem to detect and identify selected biological agents all in a single test. With the flexibility afforded in by our customizable updates in our VereChip™ target panels, we are able to provide diagnostic and surveillance tools needed today and be ready for the next threat tomorrow.

Veredus Laboratories, the future of diagnostics and surveillance, today.

Features

- Multiplex amplification reactions
- Multiple probes per target ensures reliable detection
- Small sample volume requirement
- Fast and programmable temperature ramp rate
- Scalable for high throughput
- PCR yield is comparable to standard thermal cyclers
- Functional validation of hybridization for each assay is provided by an internal positive hybridization control
- Proprietary microfluidic interface: contact surfaces are biocompatible and do not inhibit the PCR reaction
- Short-time required for fluidic operations

Advantages

Speed
- Viral RNA samples to results in less than 2.5 hours

Specificity
- Detection of specific targets for 2019-nCoV and SARS-CoV without cross-reactivity with other coronaviruses such as OC43, 229E, KhU1, NL63

Comprehensive
- Qualitatively detect 2019-nCoV with the additional capability of detecting a subset of SARS-CoV simultaneously within the same test

Mobile
- The VerePLEX™ Biosystem is designed to be portable for usage at areas such as checkpoints and borders

Easy to Use
- The simple workflow allows for minimally trained or non-scientific personnel to run tests

Updates Available
- Probes can be updated quickly to include new mutations of the evolving coronaviruses and ensure the right coverage of detection

VerePLEX™ Biosystem

The VerePLEX™ Biosystem combines molecular biology, microfluidics and microelectronics to bring the future of diagnostics and surveillance to you today. The VerePLEX™ Biosystem, along with the VereChip™, is a breakthrough in innovation, integrating two powerful molecular biological technologies: PCR and Microarray.

VerePLEX™ Biosystem includes the following components:
- Temperature Control System (5 random access modules)
- Optical Reader
- Biosystem Software
- Barcode Reader

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