Enterovirus D68 real-time PCR

Background:
Human Enterovirus D68 (EV-D68) is a highly contagious pathogen that causes mid to severe respiratory tract illnesses. In 2014, a nationwide outbreak of EV-D68 led to the hospitalization of people across the United States with an unprecedented level of pediatric cases reported in Missouri and Illinois. Several EV-D68 outbreaks have occurred across the globe (Japan, the Philippines, the Netherlands, China) indicating an international public health concern. Currently there are no treatments available for EV-D68, however, a better diagnostic tool will guide clinical management of the disease and prevent unnecessary use of an antibiotic regimen.

Technology Description:
Researchers at Washington University have developed a rapid and specific reverse transcriptase PCR (RT-PCR) assay for the detection of human EV-D68 and its subtypes. An EV-D68 specific primer-probe set was designed based on the complete genome sequencing of EV-D68 (Wylie et al). The published study confirmed these primers could detect EV-D68 in clinical samples with a higher degree of sensitivity (10-100X) compared to the commercially available tests. In addition, this approach recognized more divergent EV-D68 subtypes and was not cross-reactive with non enterovirus strains. This test will be applicable for both epidemiological surveillance and clinical diagnosis of EV-D68 associated respiratory illnesses.

Indications:
Diagnostic test

Key Advantages:
- Highly Specific: targets EV-D68 and its subtypes with no cross reactivity
- Highly Sensitive: up to 100X more sensitive than comparable tests
- Test uses noninvasive clinical samples (nose and cheek swabs)
- Test informs accurate diagnosis of EV-D68 preventing unnecessary use of antibiotics
- Test is applicable for community surveillance

Publications:


Lead Inventor:
Gregory A. Storch, MD., Director, Division of Pediatric Laboratory Medicine, Ruth L. Siteman Professor of Pediatrics, Professor of Medicine and Molecular Microbiology

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<th>Licensing Contact</th>
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<tr>
<td>David Silva, Ph.D</td>
<td>Diagnostic, clinical testing</td>
<td>015155</td>
</tr>
<tr>
<td>dsilva.wustl.edu</td>
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