

A Gene Expression Panel For Diagnosis Of Ebola Virus Infection

Tech ID: 25075 / UC Case 2015-103-0

INVENTION NOVELTY

This invention identifies a novel host gene expression panel to screen for the Ebola virus in pre-symptomatic patients.

VALUE PROPOSITION

Ebola is caused by a highly infectious virus prevalent in Central and West Africa. The 2014 Ebola outbreak in West Africa was the largest in history, resulting in over 10,000 deaths and an economic loss of nearly two billion dollars. Travelers from these regions transmitted the disease to patients in Spain, the United Kingdom, and the United States, where there were 6 confirmed cases.

Current methods to diagnose Ebola, such as RT-PCR and antigen capture, only detect Ebola after symptoms are apparent; there is very little Ebola virus in the blood at the beginning of infection. On average, symptoms arise 8-10 days after infection, though in some cases the incubation period may be longer. Ebola is not generally contagious until symptoms are present; isolation of pre-symptomatic patients would limit transmission of the disease.

Because both the treatment and effective isolation of patients are contingent on early detection, an early diagnostic tool would be valuable. A diagnostic developed from this invention could be used to screen patients for Ebola in order to both start treatment as soon as possible and to prevent transmission of the disease.

TECHNOLOGY DESCRIPTION

Scientists at the University of California, San Francisco have identified novel biomarkers to diagnose Ebola by using transcriptome profiling to measure changes in the host genome expression subsequent to infection. Because the assay measures changes to the host gene expression rather than direct detection of the virus, the Ebola virus can be identified in the early stages of infection before symptoms arise. The biomarker panel was developed using 20 patients samples from Ebola-infected patients and non-Ebola hemorrhagic fever and unaffected controls. Further validation studies are ongoing. These novel biomarkers can be potentially utilized to develop an early diagnostic to screen pre-symptomatic patients for Ebola.

APPLICATION

- ▶ Multiplexed diagnostic assay for early diagnosis of Ebola

LOOKING FOR PARTNERS

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OTHER INFORMATION

KEYWORDS

Biomarkers, Infectious disease, Diagnostic, Screening, Hemorrhagic fever, Ebola virus

CATEGORIZED AS

- ▶ **Medical**
 - ▶ Diagnostics
 - ▶ Disease: Infectious Diseases
 - ▶ Screening

RELATED CASES

2015-103-0

To develop & commercialize the technology as a method to develop multiplexed diagnostic assays for hemorrhagic fevers such as

Ebola and screening assays for patients exposed to Ebola.

STAGE OF DEVELOPMENT

Pre-clinical

RELATED MATERIALS

▶ Not available at this time

DATA AVAILABILITY

Under a CDA/NDA

OTHER INFORMATION

▶ Measures host response biomarkers so that viral infection can be detected before symptoms arise

▶

Can diagnose Ebola before patient is contagious

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

▶ [Novel Biomarker Panel for the Early Diagnosis of Lyme Disease](#)

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