
From: A Barrett [REDACTED]
Sent: Wednesday, October 8, 2014 10:46 PM
To: jeffrey E.
Subject: Re: Confidential: Early detection of Ebola

Thanks for your help

Anth=ny Barrett

On Oct 8, 2014, at 6:32 PM, "jeffre= E." <jeevacation@gmail.com <mailto:jeevacation@gmail.com> =gt; wrote:

ill=try, also i started the conversatoin with mark about splitting u= the interest, he is open to the idea, but wanted someone=smart to advise. that meanss he does't want to pay for advice.

On Wed, Oct 8, 2=14 at 6:28 PM, A Barrett [REDACTED] <mailto:[REDACTED]> wrote:

Hi Jeffrey,

=ny interest in helping on this. I know last time you and Francis did not hi= it off. Nevertheless he has been successful as a scientist and is really n=t a "people' person.

He claims he can devel=p the tools to diagnose Ebola before it becomes symptomatic.

Anthony Barrett

Begin forwa=ded message:

From: Franc=s Barany <ba=any@med.cornell.edu <mailto:baany@med.cornell.edu> >
Date: October 8, 2014 at 6:06:32 PM E=T
To: Anthony Barrett <[REDACTED]>
Cc: Michael Gargano <mgargano@argentrust.com>
Subject: Confidential: Early detection of Ebola<=b>

Dear Anthony,

I really appreciate your willingness to find a potential pathway to Bil= Gates and the Gates Foundation.

By way of introduction, I have been a Professor at Weill-Cornell for the last 30 years, and am best known for having invented the Ligase Chain Reaction (LCR) and the Universal Array. I hold 46 issued US patents, a number of which have led to commercial tests to diagnose genetic diseases (i.e. cystic fibrosis, MLPA tests, DNA microarrays and targeted Next-Gen sequencing). Earlier this year, I received the IFCC Award for Significant Contributions in Molecular Diagnostics.

I have been collaborating with Dr. Linnie Golightly of our Center for Global Health/Infectious Disease Division for the past decade, working together closely to develop multiplexed PCR-LDR assays for Category A Biothreat agents, including all the major viral hemorrhagic fever viruses (VHF; ebolavirus, marburgvirus, Crimean Congo hemorrhagic fever virus, Lassa fever virus, Rift Valley fever virus, Dengue virus, and Yellow fever virus). (Kindly see below abstract of manuscript just being submitted). In addition, in collaboration with Professor Soper at UNC, we have been building micro-fabricated devices to rapidly detect pathogens.

Most recently, we have begun designing micro-fabricated devices that will allow for electronic detection, obviating the need for expensive hardware used in most fluorescent detection schemes (i.e. Taqman assays). As such, we are poised to combine these technologies for rapidly identifying and providing quantitative viral load for all the VHF, Variola, Malaria or other Category A pathogens directly from a drop of blood, with the next level of such devices suitable for working in developing countries, and may be powered and run by a cell phone or smart device.

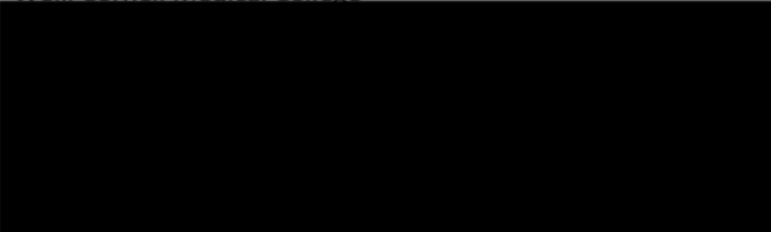
- Current CDC approved EZ1-RT-PCR Taqman assay has LOD of 5,000 PFU/ml. This works when patient is febrile, i.e. has overt symptoms and may be contagious.
- Next level of assay needs to be > 100-fold more sensitive. We know how to address this issue.
- This would allow for identification of individuals with early viral replication in their blood before they are contagious, so they may be isolated, and further, early detection may improve outcomes.

Would your contacts be able to help us, so in turn we may help protect our country?

Most appreciated,

Francis & Linnie

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Linnie Golightly, MD
Associate Professor of Clinical Medicine
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Center for Global Health
Division of Infectious Diseases
Weill Cornell Medical College





A Multiplex PCR/LDR Assay for the Simultaneous Identification of Category A Infectious Pathogens: Agents of Viral Hemorrhagic Fever and Variola Virus

Das S.1, Rundell M.S.2, Mirza A.H.2, Pingle M.R.2, Shigyo K.1, Garrison A.R.3, Paragas J.4, Smith S. K.5, Olson V. A.5, Larone D.H.2, 6, & Spitzer E.D.7, Barany F.2 and Golightly L.M.1, 2

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4. Integrated Research Facility, Division of Clinical Research, NIAID, NIH, Ft. Detrick, MD
5. Poxvirus Team, Poxvirus and Rabies Branch, Division of High Consequence Pathogens and Pathology, National Center of Emerging Zoonotic and Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, GA
6. Department of Pathology and Laboratory Medicine, Weill Medical College of Cornell University, New York, NY
7. Department of Pathology, Stony Brook University Medical Center, Stony Brook, NY

ABSTRACT

CDC designated category A infectious agents pose a major risk to national security and require special action for public health preparedness. They include viruses that cause viral hemorrhagic fever (VHF) syndrome as well as variola virus, the agent of smallpox. VHF is characterized by hemorrhage and fever with multi-organ failure leading to high mortality and morbidity. Smallpox, a prior scourge, has been eradicated for decades making it a particularly serious threat if released nefariously in the essentially non-immune world population. Early detection of the causative agents and ability to distinguish them from other pathogens is essential to contain outbreaks, implement proper control measures and prevent morbidity and mortality. We have developed a multiplex detection assay that uses several species-specific PCR primers to generate amplicons from multiple pathogens; these are then targeted in a ligase detection reaction (LDR). The resultant fluorescently-labeled ligation products are detected on a universal array enabling simultaneous identification of the pathogens. The assay was evaluated on 32 different isolates associated with VHF (ebolavirus, marburgvirus, Crimean Congo hemorrhagic fever virus, Lassa fever virus, Rift Valley fever virus, Dengue virus, and Yellow fever virus) as well as variola virus and vaccinia virus (the agent of smallpox and its vaccine strain, respectively). The assay was able to detect all viruses tested including 8 sequences representative of different variola virus strains from the CDC repository. It does not cross react with other emerging zoonoses such as monkeypox virus or cowpox virus, or six flaviviruses tested (St. Louis encephalitis virus, Murray Valley Encephalitis virus, Powassan virus, Tick-borne encephalitis virus, West Nile virus and Japanese encephalitis virus).

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please note

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