

Licensable Technologies

BIOIQ: Biological Identifier and Quantifier

Applications:

- Pathogen detection and identification

Benefits:

- BIO IQ is a large advancement over current technologies that use PCR, or immunoassays
- BIOIQ uses a simple system of direct detection on sample media, eliminating or reducing time, energy, size constraints, and consumables

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Summary:

Efficient field or point of care diagnostics rely on speed, low cost, ease of use, and ability to quantitate allowing for proper selection of methods and timely, effective equipment and personnel release or patient treatment. Inexpensive, hand-held technologies that can quantitate a pathogen are basically nonexistent in the field today. Needs for pathogen detection and identification can be realized with a novel patent-pending LANL technology Biological Identification and Quantification or **BIOIQ**, which identifies and quantifies any strain or species of microorganism in real-time.

BIOIQ employs LANL proprietary dyes for detection of the presence of microorganisms of a specific species or strain. LANL has demonstrated this technology with *Bg* spores and vegetative *E. coli*. The detection of multiple pathogens is accomplished by using a dye set, which allows for a screening or general detection of human pathogens of interested. Multiple species can be identified simultaneously.

LANL's patent pending technology and custom dyes can detect a specific microorganism or a tailored set by nucleic acid sequence. The device will accept a sample collected from air, blood, urine, serum, water, or a surface, the sample inserted into a reader, result obtained in minutes, data stored internally and transmit to an offsite location. No sample preparation or extraction is needed decreasing current detection limits and failures. The unaltered sample can be used for further subsequent analysis.

The future detection platform would use commercially available components and supplies for ease of manufacture/deployment. The platform will be battery operated, rugged, and field deployable. Success is very likely to result in a hand-held possibly palm-sized device for field or point-of-care pathogen detection.

Development Stage:

LANL and the Lviv Institute of Epidemiology, Ukraine, are at the initial stages of proposal development.

Patent Status:

Patent pending.

Licensing Status:

Available for licensing once project is developed.