

High-Throughput Fluorescent Screening Assay

Organization

Kansas State University

Industry:

Healthcare

Researchers:

Dr. P.E. Klebba

Status of Intellectual Property:

Patent Pending

Publication No.: WO

2017/004577

Next Steps:

- HTS assay has been validated for *A. baumannii*
- Need to screen compound libraries for *A. baumannii* (this was done for *E. Coli*)
- Apply to further diseases
- Exhibit capabilities to academic researchers as well as interested companies

For more information contact:

Jim Baxendale

Whiteboard2Boardroom

baxendalej@umkc.edu



Wanted

Experienced leader to commercialize novel high-throughput screening assay to help companies and academic research identify new antibiotics to use against Gram-negative bacteria.

Customer Problem

Gram-negative bacteria are a factor in the near 100,000 deaths caused each year by hospital-associated bacterial infections. These microbes must acquire iron during their colonization in animals and humans – this High-Throughput Screening assay (HTS) can identify molecules that block iron bacterial transport and thus inhibit formation of bacterial infections.

Potential Market Uses

This screening assay would be valuable in order to identify and produce new non-resistant antibacterial drugs derived from the molecules identified by the screening assay. These novel treatments could be used to reduce the severity of multiple illnesses and reduce the risk of death from antibiotic-resistant Gram-negative bacteria that are frequently transmitted in hospitals.

Market Size

In a year there are 1.7 million hospital associated bacterial infections with Gram-negative bacteria being responsible for 2/3 of the mortality of these infections. In 2009 it was known at least 20% of the isolates were resistant to all known antibiotics; the need for novel solutions is large and growing.

Innovation

This novel high-throughput screening assay can help companies and academic researchers identify new antibiotics to use against Gram-negative bacteria, especially CRE/ESKAPE pathogens. This assay finds molecules that block bacterial iron transport and inhibit the Gram-negative bacteria from being able to utilize iron uptake in the host, person or animal, making them ill.

Stage of Development

The HTS assay has been applied to *E. coli* and has had its methodology validated through trials. It has also been applied to a number of ESKAPE pathogens, which include *Acinetobacter baumannii*, a disease rated as “Critical” by the World Health Organization for the research of new antibiotics.

Competitive Advantages

- Small amount of cells needed; day-to-day reproducibility of test results
- Testing method is readily adaptable to different pathogens
- High-throughput capability of the test
- Potential reduction in illness and death with production of new non-resistant antibiotics