Immunoassay for early detection of Lyme disease and treatment monitoring

Technology #cu17229

This technology is an immunoassay for early-stage detection and monitoring of Lyme disease.

Unmet Need: Method for early detection of Lyme disease and assessment of treatment efficacy

Current methods to diagnose Lyme disease are based on detecting antibody response to Borrelia bacteria, the causative agent of Lyme disease. However, these methods fail to diagnose early stages of the disease and are not indicative of an active infection. Additionally, these methods are unable to report on the progress of treatment. As such, there is a need for a diagnostic method that can detect early-stage Lyme disease and track disease progression.

The Technology: Serum-based Lyme diagnostic assay enables early detection and treatment response evaluation

This technology measures the blood serum levels of two acute phase response proteins in order to detect early stage Lyme disease and post-treatment Lyme disease syndrome (PTLDS). This assay identifies a correlation between elevated levels of these specific proteins and Borrelia bacteria concentrations in the blood and skin during the earliest stage of the disease, when conventional diagnostics are unreliable. Additionally, this technology measures levels of a specific protein found to be elevated in PTLDS, which current diagnostic assays cannot detect. Taken together, this technology promises to improve management of Lyme disease by providing both early detection and follow-up assessment of treatment efficacy. This technology has been validated using samples from patients with active Lyme disease or PTLDS.

Applications:

- Detection of early Lyme disease
- Diagnostic assays for staging Lyme disease
- Assessment of patient response to treatment
Advantages:

- Blood-based detection of widely expressed proteins
- Higher sensitivity for very early stage Lyme disease
- Earlier diagnosis of Lyme disease
- Detection of post-treatment Lyme disease syndrome
- Highly sensitive assays detecting relevant proteins in serum already exist

Lead Inventor:

Armin Alaedini, Ph.D.

Patent Information:

Patent Pending

Related Publications:


Tech Ventures Reference:

- IR CU17229

- Licensing Contact: Jerry Kokoshka

Inventors

Armin Alaedini