Docket #: S24-301

Electronic Lateral Flow Assay Rapidly Detects and Quantifies Multiple Compounds Wirelessly

Stanford researchers have developed a electrochemical lateral flow assay (eLFA) diagnostics platform that eliminates the instrumentation typically needed to analyze or read point of use tests.

Point of use tests are commonly conducted under scenarios where resources are scarce. They are utilized in order to rapidly detect and quantify multiple compounds of interest in biological, chemical and environmental samples. However, instrumentation cost, size and power requirements can severely limit utilization of point of use tests in resource-limited settings. Elimination of the instrumentation typically required to analyze or read point of use tests would enable modern diagnostics technologies to be employed more widely. This would provide users with real-time, actionable health and/or environmental information.

Therefore to address the limitation of instrumentation, Stanford researchers developed a electrochemical lateral flow assay diagnostics platform that eliminates the need for expensive analyzers or reader instrumentation typically required for quantitative tests. Instead the eLFA communicates the presence or abundance of compounds of interest to a user wirelessly via a cell phone app. This advanced eLFA technology platform presents commercial opportunities as it is compatible with the two most widely utilized molecular diagnostics test formats, sandwich assays and competition assays.

Stage of development
Prototype

Applications

- Tests that can identify and wirelessly communicate the presence or abundance of:
    - Infectious disease antigens or antibodies in biological samples
    - Human and veterinary health and wellness biomarkers in biological samples and/or chemical irritants or toxins in environmental samples
    - Adulterants or impurities in foods, chemicals and pharmaceuticals

Advantages

- Accurate and low-cost
- Eliminates the need of traditional test reader instrumentation.
- Capability to measure multiple biomarkers simultaneously
- Powered wirelessly

Innovators

- H. Tom Soh
- David Zakharian
- Patrick Lawless

Licensing Contact

Eileen Lee

Email