

Real Time Immunoassay Detection on a Chip

Published date: Nov. 12, 2013

Technology description

This chip based system incorporates microfluidics with label free optical detection. It can be used to replace ELISA based detection schemes for point of care detection of infectious diseases, cancer, and other diseases detected using antibodies or alternative chemical recognition means. The technology has been demonstrated in Dengue fever detection and work is ongoing in Leukemia detection.

Description:

This microfluidic chip based detection system takes antibody or other ligand binding detection to a robust low cost platform based on long-range surface plasmon polariton (LRSP) waveguides that are easily built into the microfluidic chips. The LRSPs are monitored to detect ligand binding without the use of labels. Our first tests detect IgM specific to the Dengue Fever virus in patient blood plasma samples. It provides the following benefits.

Advantages

Multiple detection schemes- possible – current tests used both immobilized virus detecting antibody, and immobilized antibody detecting virus

Reliable, proven chemistry- that includes simplified versions of well established detection techniques.

Rapid real-time label-free - detection with fewer steps than ELISA

Portable and automatable- as the detection technique occurs on an integrated chip.

Sensitivity- comparable to state of the art tests such as ELISA

Flexible- format as Chips can be regenerated

Low Cost- chip based system

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