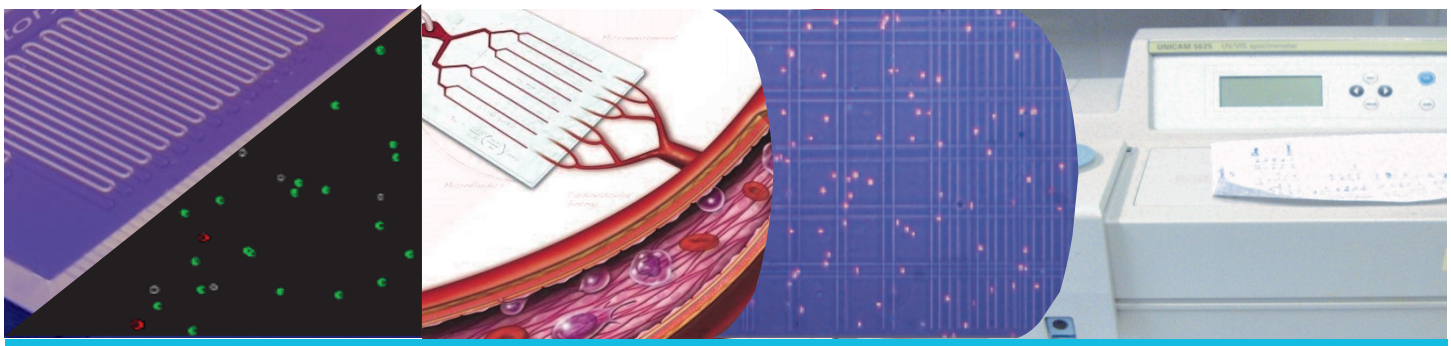

TECHNOLOGY AVAILABLE FOR TRANSFER

MICROFLUIDIC FLOW ANALYZER: POINT OF CARE DIAGNOSTIC DEVICE

A state of the art, patented platform technology

Key Features

- Portable diagnostic device
- Detects pathogenic cells
- Also provide quantitative information i.e. level of infection
- Low sample volume requirement ranging from 10-50 µl
- Fast Analysis within 5 minutes
- Simple process for pretreatment of samples
- High sensitivity with detection of signal from even single cell
- Low cost, approx. Rs. 2-4 lakhs as compared to the flow cytometer costing 50-100 lakhs.

Potential Applications

- Pathological Detection
- Periodic monitoring of AIDS patients through CD4 cell count
- Cell culture assay
- Blood count
- Oncological Applications
- Environmental Monitoring

State of Development

Proof of concept tested for both fluorescent and non fluorescent detection. Samples including Cd4/Cd8 cells tested and shows very high level of sensitivity

Intellectual Property

Patent Granted-United States (US), South Africa

Patent Pending-India and several foreign jurisdictions including Europe (EP), China (CN), Korea (KR), Japan (JP), Nigeria (NG), Vietnam (VN), Eurasia, ARIPO

Background

Currently, the gold standard for CD4+ cell enumeration is flow cytometric counting and commercial multi-purpose flow cytometers, or single-purpose CD4- counting flow cytometers. These bulky instruments are disadvantageous in that they require expensive chemicals, thorough maintenance and experienced medical professionals to operate and maintain them effectively. This makes AIDS diagnosis a very costly and cumbersome affair at the present time.

Besides, diagnosis and monitoring of HIV Cell enumeration has applications including environmental monitoring, drinking water contamination, cell culture assays etc.. While there is a wide range of methods that have been developed to detect microbes in water, they all suffer from a number of limitations.

Technology

The Microfluidic flow analyzer is a platform technology which uses fluidics as a base with opto-electronics for detection of cells and has diverse applications including mammalian cell counting in diagnostic industry and algal or yeast cells for detecting water contamination. In particular, the technology provides a Point-of-Care device for diagnosis and monitoring of various diseases primarily for immune response monitoring through CD4/CD8 cell counting in HIV/AIDS. The analyzer provides pathogenic cell count in a highly sensitive manner with small sample volumes to the tune of single cell detection. The technology is easily maintained and upgradable.

Developers

Centre for Cellular And Molecular Platforms (C-CAMP) and Indian Institute of Technology-Madras (IITM)

Market

The microfluidics market is witnessing tremendous growth owing to the growth in the pharmaceutical and biotechnology research. However, high prices of microfluidics-based genomic and proteomic analysis platforms and lack of proper healthcare and research infrastructure in emerging markets are restraining the growth of the global market to a certain extent. The Microfluidics market is expected to reach $7.5 Billion by 2020 from $3.1 Billion in 2015, at a CAGR of 19.3%. North America is the largest regional segment of the global market, followed by Europe due to the highly developed healthcare system and presence of leading market players for microfluidics. However, the Asia-Pacific region including India is the fastest-growing market owing to factors such as increasing geriatric population, rising incidences of lifestyle diseases, growing R&D expenditure, and rapidly growing healthcare industry.

Considering the existing market size and its growing trends, this novel technology offers itself as a unique opportunity to capitalize on the unmet need in the area of point of care diagnostics.

http://www.marketsandmarkets.com/Market-Reports/microfluidics-market-1305.html

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