

MICROFLUIDIC CHIP FOR RAPID MULTI-ANALYTE DETECTION

Tech ID: 21154 / UC Case 2011-045-0

PATENT STATUS

| Country | Type | Number | Dated | Case |
|--------------------------|---------------|-----------|------------|----------|
| United States Of America | Issued Patent | 9,841,417 | 12/12/2017 | 2011-045 |

BRIEF DESCRIPTION

Conventional analytical techniques used for detecting specific analytes in a sample often fall short of performance needs for applications that demand high-throughput sample analysis or operate in resource poor settings. These conventional techniques also often require labor-intensive, time consuming, multi-step procedures carried out by trained technicians and are impractical for use in a clinical setting.

UC Berkeley researchers developed an automated multi-dimensional microfluidic device which uses microfluidic technology to streamline all the steps needed to obtain mobility and binding-based identity information in one continuous assay. The device also uses at least two electric fields to subject the sample to two or more directionally distinct electric fields. The assays complete in minutes and are readily adaptable to a broad range of multistage assays and multiplex testing. The assays are also highly sensitive and specific.

SUGGESTED USES

- » Rapid and automated bioanalytical separation, identification, and quantification
- » Multiplexed analyte testing (proteins, protein fragments, nucleic acid sequences, biomacromolecules)
- » Research, validation, and point of care diagnostic assays
- » High throughput analysis

ADVANTAGES

- » Adaptable to detect a wide range of analytes
- » Can be used as a rapid western blotting system (assays require less than 5 minutes) provide large time savings over conventional methods
- » Consumes low volumes of both sample, primary antibody and other reagents
- » Does not require manual intervention and is less labor intensive
- » One cohesive device optimized for separation, transfer, dilution and blotting steps
- » Simultaneous multi-analyte detection
- » Adaptable to many types of diagnostic sample types (e.g., serum, CSF, tissues, saliva, semen)

PUBLICATION

Multianalyte on-chip native Western blotting

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INVENTORS

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OTHER INFORMATION

KEYWORDS

microfluidic, assay, western blot, lab
on chip, multi-analyte, research tools,
diagnostic

CATEGORIZED AS

- » **Biotechnology**
- » Genomics
- » Proteomics
- » **Medical**
- » Diagnostics
- » Research Tools
- » **Research Tools**
- » Other

RELATED CASES

2011-045-0, 2009-064-0, 2011-054-0,
2011-067-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Simultaneous Detection Of Protein Isoforms And Nucleic Acids From Low Starting Cell Numbers](#)
- ▶ [Automated Two-Dimensional Electrophoresis In Microfluidic Chamber](#)
- ▶ [Dropblot Design Integrates Droplet Microfluidics With Single-Cell Electrophoresis](#)
- ▶ [Single-Cell Isoelectric Focusing and pH Gradient Arrays](#)



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