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Microfluidic Platform for Sorting Plant Cells

Tech ID: 33997 / UC Case 2020-649-0

BRIEF DESCRIPTION

A novel dielectrophoresis (DEP)-based microfluidics method for efficient and label-free sorting of plant cells, leveraging unique dielectric properties.

FULL DESCRIPTION

This technology introduces a dielectrophoresis (DEP) microfluidics method designed specifically for sorting plant cells based on their inherent dielectric properties. By capitalizing on the distinct cross-over frequencies of different plant cells, this method achieves precise sorting without the need for labeling or pre-processing, overcoming limitations of current fluorescence activated cell sorting (FACS) techniques.

SUGGESTED USES

- » Agricultural research and development for studying plant cell development and proliferation.
- » Biotechnology firms focusing on plant cell-based product development.
- » Agricultural biotechnology for breeding and genetic research.

ADVANTAGES

- » Label-free sorting method, eliminating the need for cell pre-processing or labeling.
- » Utilizes inherent electrophysiological properties of plant cells for sorting.
- » Designed to handle the larger size and unique properties of plant cells, such as the cell wall.
- » Minimizes cell adhesion to electrodes through innovative electrode positioning and non-stick coatings.
- » Enhanced sorting efficiency by leveraging plant cell rolling behavior.

PATENT STATUS

Patent Pending

RELATED MATERIALS

- » [A tunable microfluidic dielectrophoresis sorter](#)

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OTHER INFORMATION

CATEGORIZED AS

- » **Agriculture & Animal Science**
 - » Plant Traits
 - » Plant Varieties
- » **Biotechnology**
 - » Other
- » **Research Tools**
 - » Cell Lines
 - » Screening Assays
- » **Sensors & Instrumentation**
 - » Scientific/Research

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2020-649-0

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