A Microfluidic Single-Cell Pairing Array for Studying Cell-Cell Interaction in Isolated Compartments

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BRIEF DESCRIPTION

Cell interactions are fundamental to biological processes. Microfluidics provides a reliable platform to study these intricate phenomena. The researchers have developed a microfluidic trapping array which efficiently pairs single cells in isolated compartments in an easy to operate manner to study cell-cell interaction, especially at single-cell level.

SUGGESTED USES

Cell-cell interaction analysis to study fundamental biological processes including adaptive immune responses, stem cell differentiation, embryogenesis, and tumor progression.

FEATURES/BENEFITS

·Microfluidics provides a reliable solution as a single-cell manipulation platform.

·Avoids the cross interference multiple paired cells in the shared microenvironment.

·Eliminates the use of animal models.

·Rapid and cost effective.

TECHNOLOGY DESCRIPTION

The researchers have developed a microfluidic trapping array which efficiently pairs single cells in isolated compartments in an easy to operate manner. The cell pairs are sealed with a particular reagent that allows for continuous supply of media for long term cell culturing and promotes pairing. Pairing including metabolic behavior of the cell pairs were observed by a proprietary imaging tool. This unique, microfluidics platform that pairs single cells is especially useful in studying cell-cell interactions.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	12,179,199	12/31/2024	2019-659

STATE OF DEVELOPMENT

Prototype with initial results.

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OTHER INFORMATION

CATEGORIZED AS

- » **Medical**
  - » Diagnostics
  - » Disease: Cancer
  - » Research Tools
- » **Research Tools**
  - » Screening Assays

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