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강연제목: 정밀의료를 위한 센서 통합형 미세유체 칩 기반 세포외 소포체 분석 / Sensor-Integrated Microfluidic Chips for Efficient and Sensitive Extracellular Vesicle Analysis in Precision Medicine

Abstract:

Extracellular vesicles (EVs), which carry molecular signatures of their parent cells, serve as promising biomarkers for disease diagnosis and therapeutic monitoring. Traditional EV analysis often relies on extensive purification steps and large sample volumes, which can be time-consuming and labor-intensive. By combining microfluidic separation techniques with electrochemical sensing, sensor-integrated microfluidic chips enable the rapid and precise analysis of EVs with minimal sample consumption and preprocessing. Additionally, these platforms improve EV purity and enrichment while enabling multi-marker analysis, thereby enhancing diagnostic accuracy and reliability. As microfluidic biosensing technology continues to advance, sensor-integrated microfluidic chips hold great promise for transforming liquid biopsy approaches, enabling real-time disease monitoring and personalized healthcare solutions.

Brief Biosketch

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