Electronic Supplementary Material (ESI) for Lab on a Chip.

Supplementary Information

Isolation and Recovery of Extracellular Vesicles Using Optically-Induced Dielectrophoresis on an Integrated Microfluidic Platform

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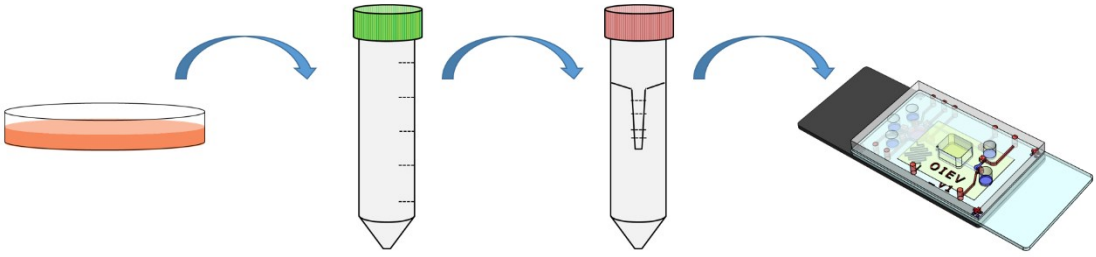
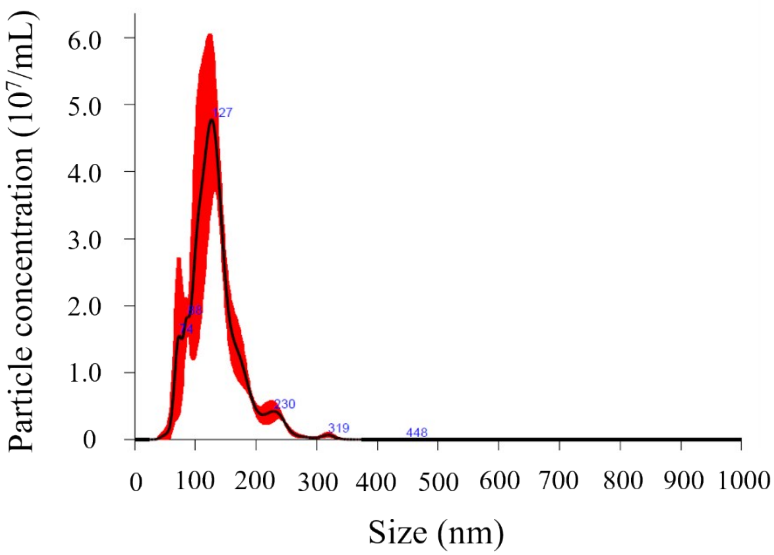


(a) Cell culture (b) Debris removal (c) Media replacement (d) ODEP operation

Supplementary Figure 1. On-bench cell-derived EVs preparation for ODEP operation on-chip. (a) PalmGRET cell culture in FBS-free medium for 48 hr. (b) Centrifugation at 1,000 × g for 20 min and 3000 × g for 20 min to remove debris. (c) Ultrafiltration at 3000 × g for 60-75 min at 8°C to replace media with 0.2 M sucrose. (d) EVs isolation and recovery via ODEP on the OIEV chip.



Supplementary Figure 2. EVs, which could be isolated by ODEP force, were recovered and analyzed by NTA. The size distribution ranging from 60 to 250 nm, showed a mode of 127 nm and a mean of 134 nm. Red color represents the standard deviation of three measurements.