

## Integrated Microfluidic Platform for Inertial Separation and Encapsulation of Single Cells in Droplets

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### Table of contents

**Video S1.** Separation junction with a rounded corner, showing 15- $\mu\text{m}$  particles redistributing and losing their single-file alignment after passing through the sinusoidal channel and before entering the droplet generation junction.

**Video S2.** Efficient separation and focusing of 15- $\mu\text{m}$  particles at the channel center at a flow rate of 120  $\mu\text{L}/\text{min}$  and moving toward the droplet generation junction, while 10  $\mu\text{m}$  particles migrate along the sidewall toward the waste outlet.

**Video S3.** Demonstration of the integrated device from the separation section to the droplet generation section, enabling separation of 15  $\mu\text{m}$  particles from 10  $\mu\text{m}$  particles, followed by direct encapsulation of the 15  $\mu\text{m}$  particles in droplets, while the 10- $\mu\text{m}$  particles migrate toward the waste outlet.

**Video S4.** Efficient separation of cancer cells from white blood cells at the separation junction, with cancer cells migrating toward the droplet generation junction for encapsulation, while white blood cells migrate toward the waste outlet.

**Video S5.** Encapsulation of cancer cells in droplets, followed by their separation from white blood cells.