Electronic Supplementary Material (ESI) for Nanoscale Horizons.

Supporting Information

On-demand deterministic release of particles and cells using stretchable microfluidics

Hedieh Fallahi,[a] Haotian Cha,[a] Hossein Adelnia,[a] Yuchen Dai,[a] Hang Ta,[a] Sharda Yadav,[a] Jun Zhang*[a] and Nam-Trung Nguyen*[a]

a.Queensland Micro- and Nanotechnology Centre, Griffith University, Nathan, Queensland 4111, Australia

*Corresponding Author: Nam-Trung Nguyen; Email: nam-trung.nguyen@griffith.edu.au

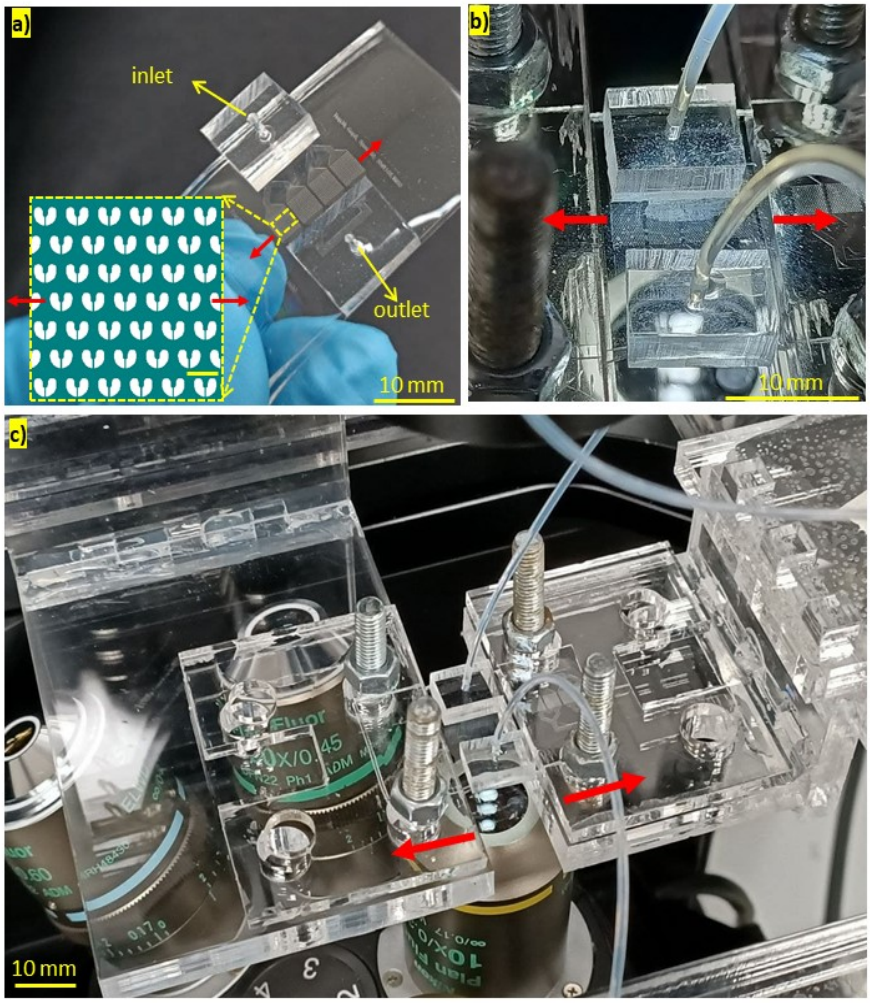

Figure S1. (a) The stretchable microtrapper with thick blocks bonded on inlet and outlet regions, the inset shows the microstructures inside each chamber for capturing of the particles/cells. (b) the microtrapper clamped in its width direction and connected to inlet and outlet tubings. (c) the PMMA stretching platform with the stretchable microtrapper fixed in it. The device is stretched in the direction of the red arrows.

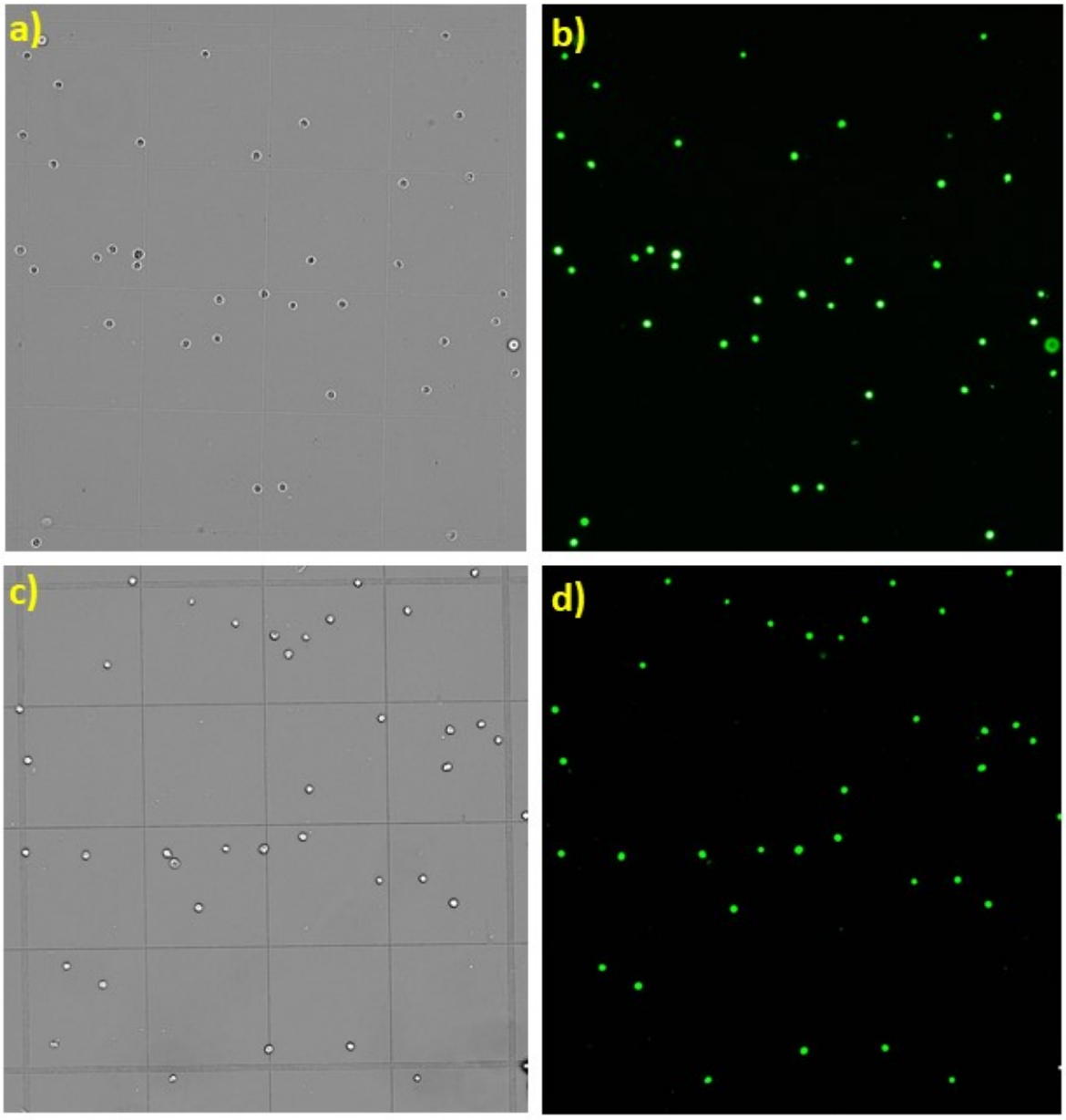

Figure S2. (a) Brightfield and (b) fluorescent images of the macrophages incubated at room temperature for 5 min. (c)Brightfield and (c) fluorescent images of the macrophages collected from the device after the capture and release processes that took 5 min in total. Green colour represent live cells. Red colour represents dead cells. No red colour were observed, meaning all cells retrieved from the device are alive.