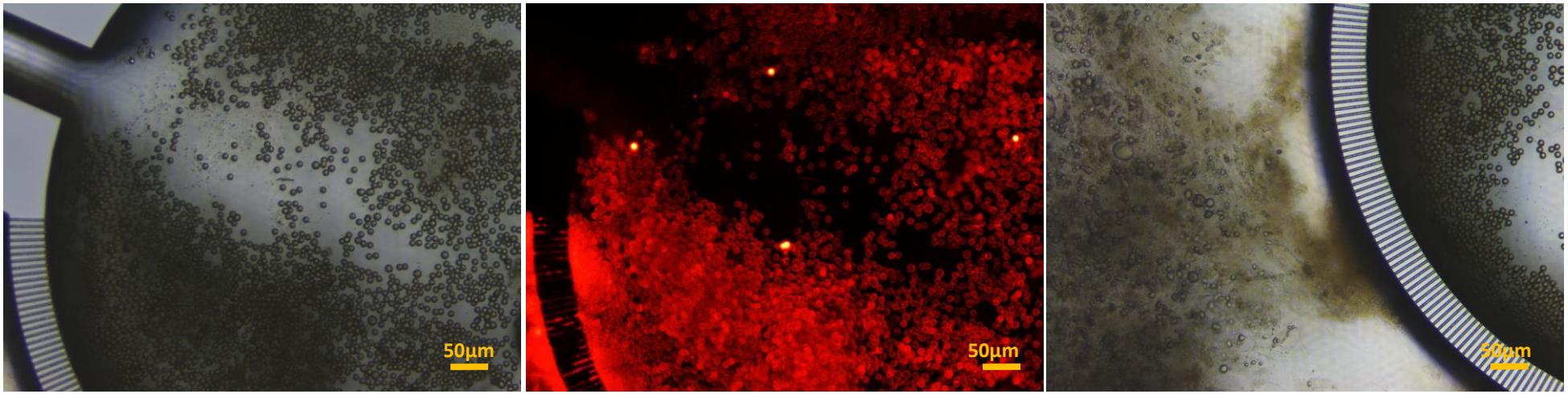
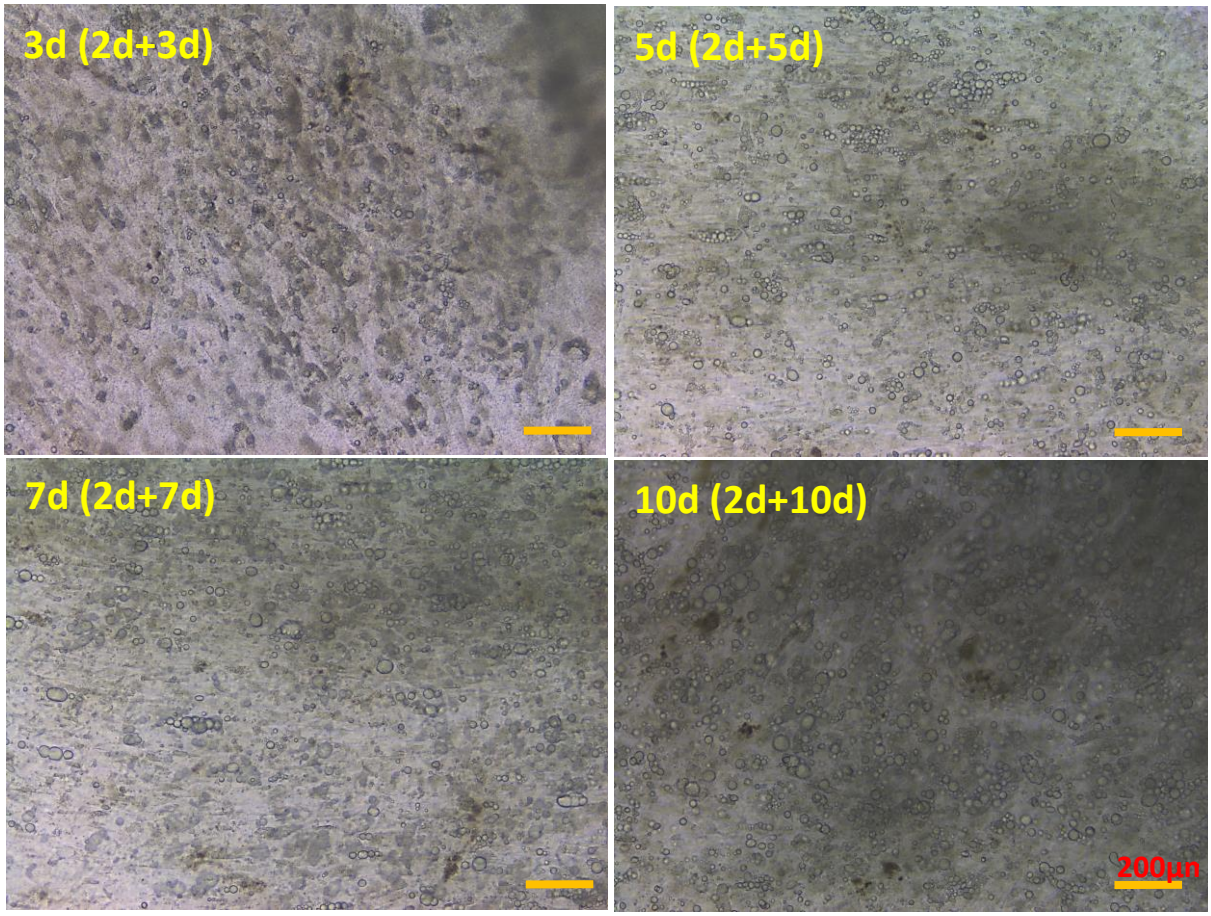
Electronic Supplementary Material (ESI) for Lab on a Chip.

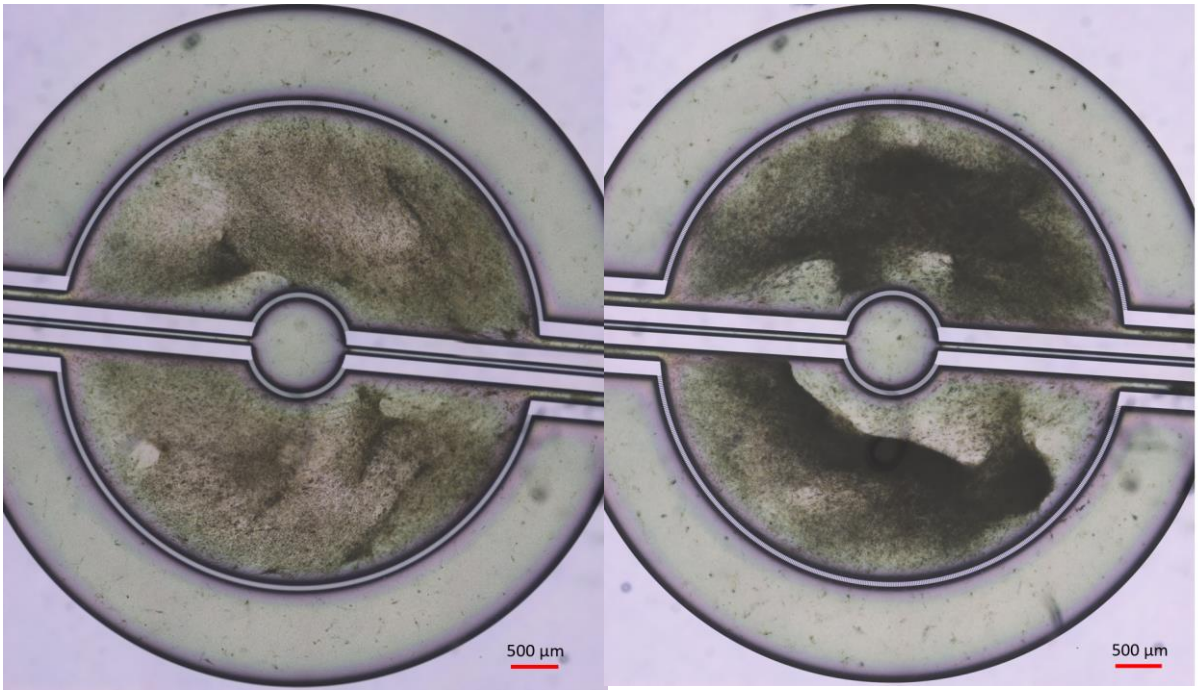


(a) (b) (c)

Figure S1. Bright-field (a) and fluorescent (b) images of magnetic beads loaded in compartment C. (c) Optical image shows adipocytes in compartment B and magnetic beads in compartment C.

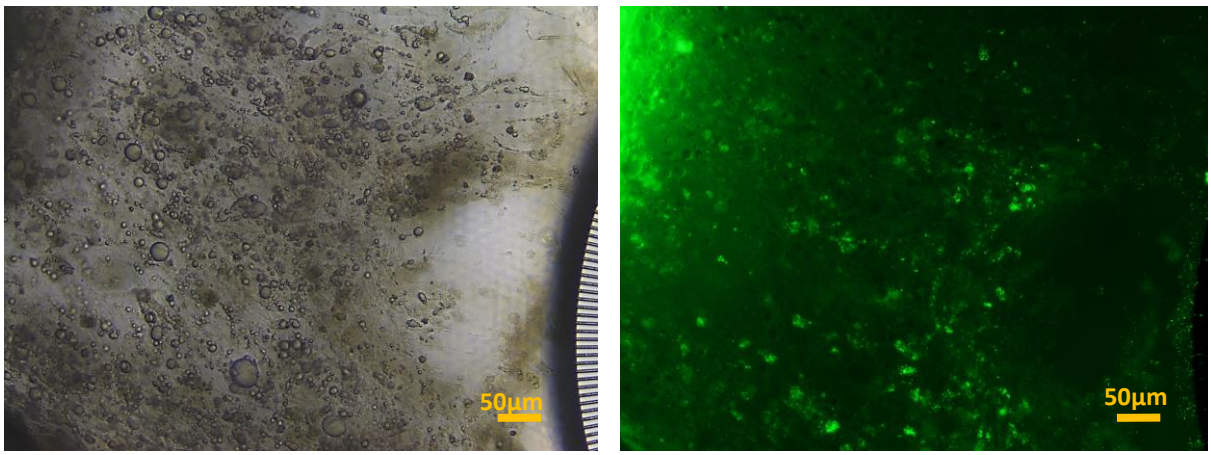


(a)



(b) (C)

Figure S2. (a) Optical images of adipocytes cultured in differentiation medium at dfferent time intervals (days in growth medium+ days in differentiation medium). (b) An overview image of the chip with adipocytes differentiated for 3 days (total culture of 5 days). (C) An overview image of the chip with adipocytes differentiated for 10 days (total culture of 12 days).



(a) (b)

Figure S3: (a) Bright-field images of adipocytes cultured on chip for 34 days. (b) Fluorescent images of adipocytes stained with Calcein-AM. Live cells were shown in green color.

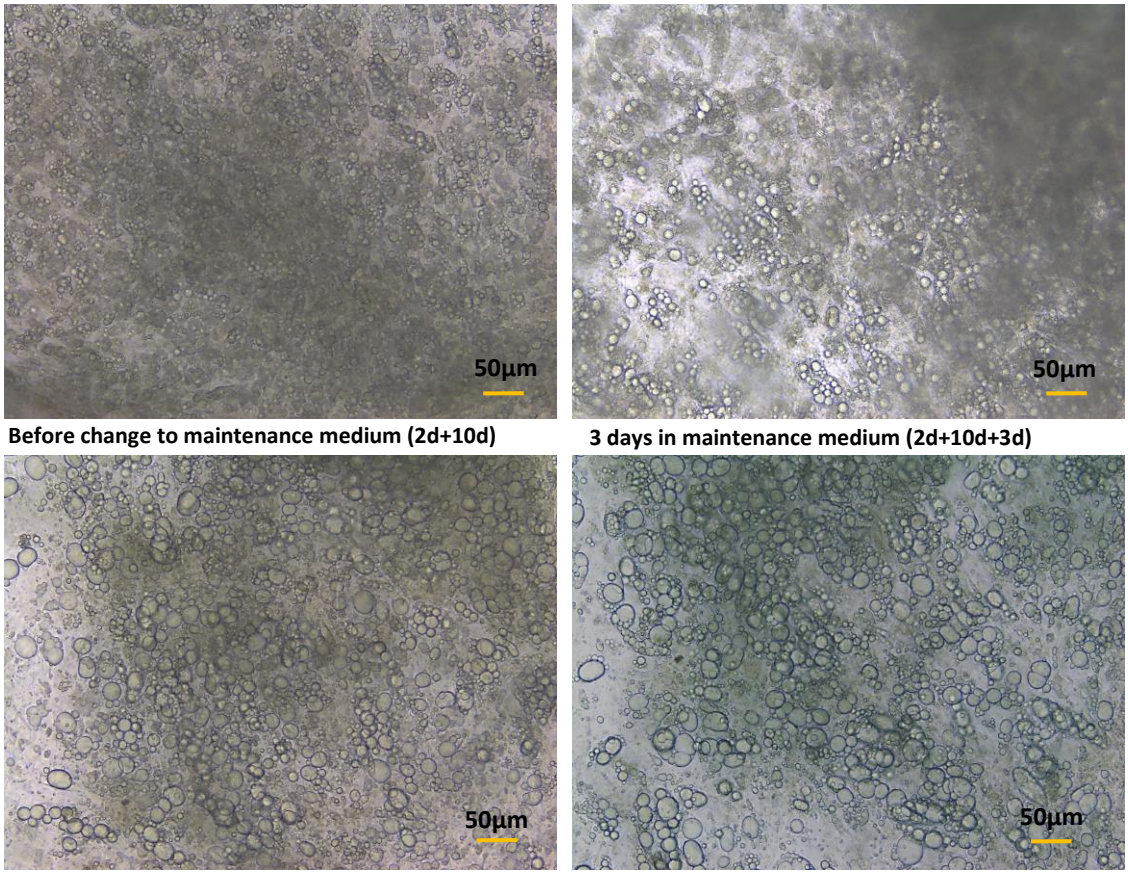


Figure S4: Adipocytes cultured in maintenance medium.

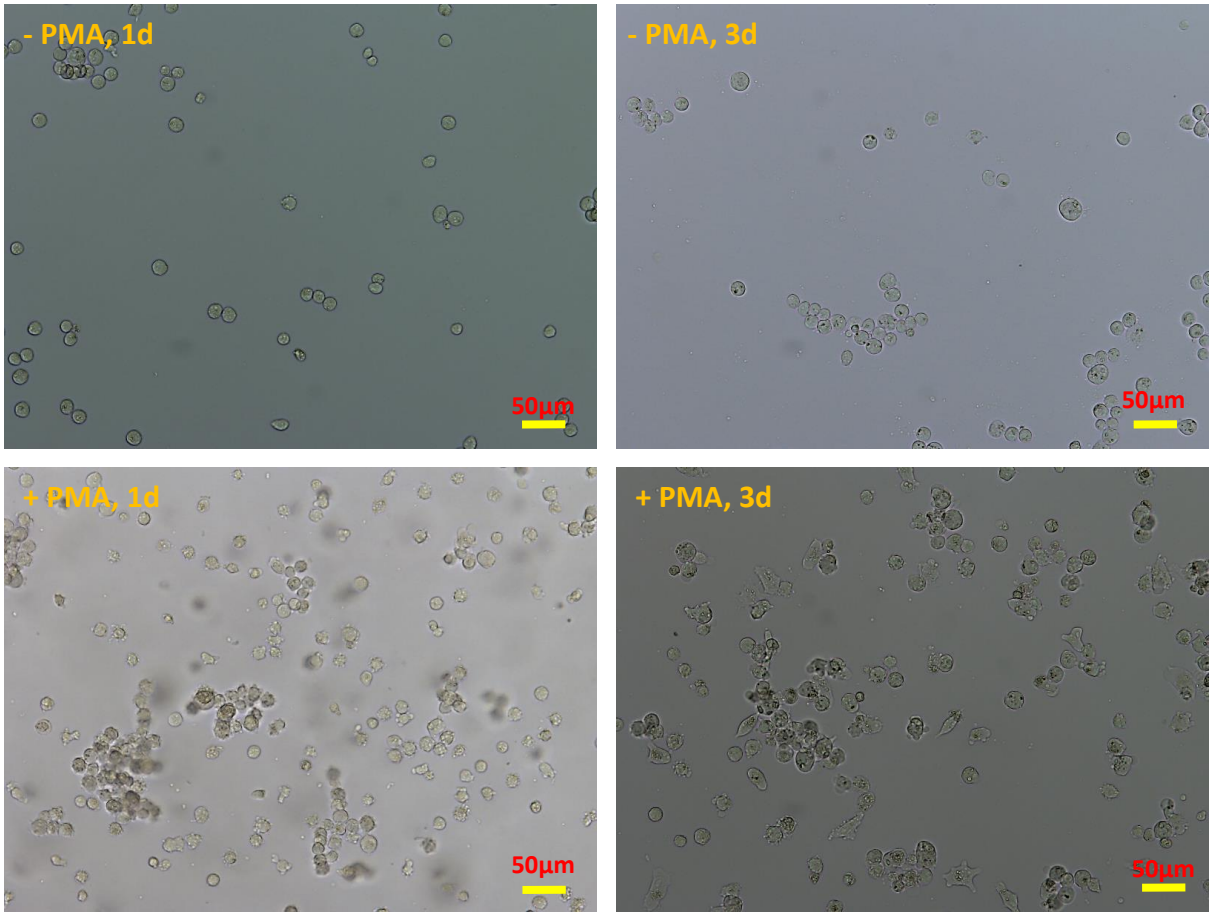


Figure S5: Microscopic pictures of untreated U937 cells (- PMA) and PMA-treated U937 cells (+ PMA) cultured on petri dish. To differentiate U937 cells into macrophage-like cells, cells were exposed to 100ng/ml PMA for 24 hours, and then centrifuged and resuspended in fresh DMEM medium without PMA. Cells were kept on petri dish for an other 2 days, and then fixed with 4% PFA.