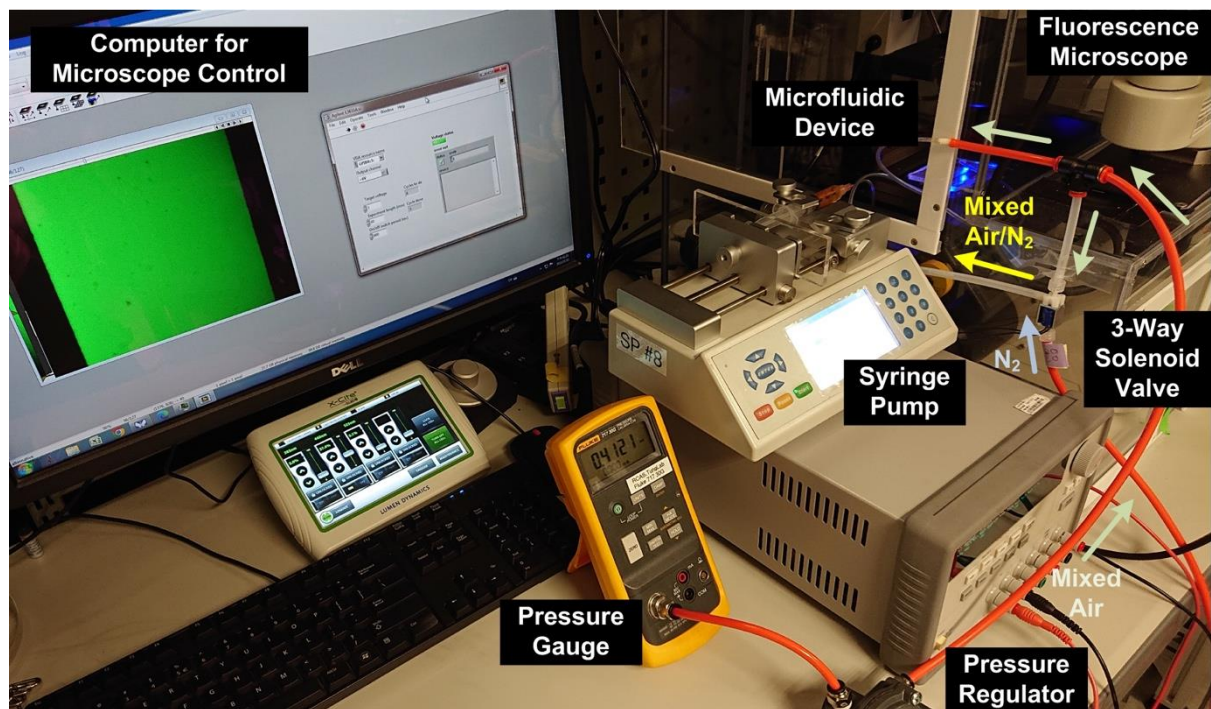
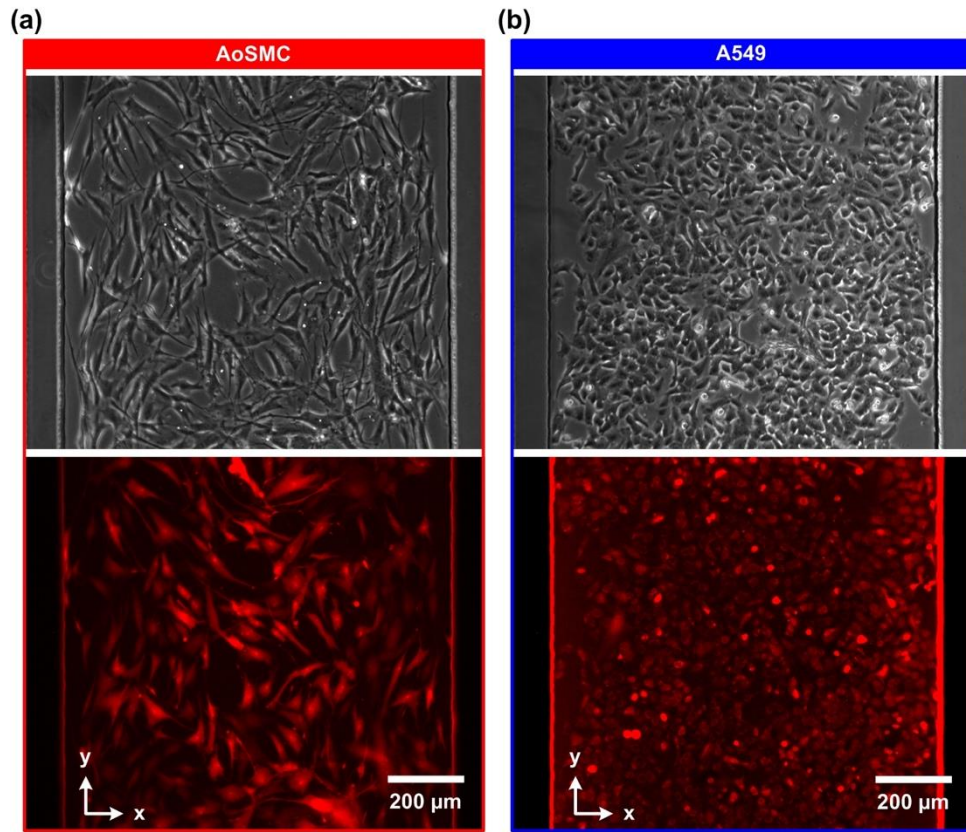


## Supplementary Information



**Figure S1.** Photo of the experimental setup to generate cyclic oxygen gradients in a microfluidic device and perform real-time fluorescence imaging.



**Figure S2.** Phase contrast and fluorescence images of (a) AoSMC and (b) A549 cells cultured in the microfluidic devices and stained with X-Rhod-1 dye for intracellular calcium imaging.