Supplemental Material

Impedance-based single cell pipetting

By David Bonzon^{*1,5}, Georges Muller^{*2,5}, Jean-Baptiste Bureau², Nicolas Uffer², Nicolas Beuchat¹, Yann Barrandon^{2,3,4}, Philippe Renaud¹

1. Laboratory of Microsystems 4, IMT, STI, Ecole Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland.

2. Laboratory of Stem Cell Dynamics, IBI, Ecole Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland.

3. Institute of Medical Biology, A*STAR, Duke-NUS Graduate Medical School, Singapore.

4. Department of Plastic, Reconstructive and Aesthetic Surgery, Singapore General Hospital, Singapore.

5. SEED Biosciences SA, Building SE-B, Route de la Corniche 5, 1066 Épalinges, Switzerland.

*D. Bonzon and G. Muller contributed equally to this work. Corresponding author: David Bonzon, <u>david@seedbiosciences.com</u>



Supplementary Figure 1 : Process flow for the sensing tip fabrication. 1) The process starts with a plastic pipette tip as substrate. 2) Parafilm is applied on the tip opening as sacrificial layer. 3) A first parylene C layer of 5 μ m is deposited on the tip. 4) The sacrificial layer is removed. 5) A second parylene C layer of 5 μ m is deposited on the tip. 6) The gold outer electrode is deposited. 7) The aperture is laser ablated. 8) A stainless steal wire serving as internal electrode is placed in the tip and held in place with a tip air filter.



Supplementary Figure 2 : Cell viability assay after cell dispensing with the pipette sensing tip. a) Bright field and fluorescent images of the well containing the dispensed cells for positive control, pipette dispensing and negative control. b) Cell viability for the same three conditions. This shows that the pipette use does not significantly alter cell viability.