

ISOLATED CELL

**FluidFM® micropipette.** The perfect tool to perform cell isolation.

FROM ADHERENT & SUSPENSION CELL CULTURES.

## FluidFM® BOT CELL ISOLATION



**With FluidFM, you can perform targeted cell isolation in a cell-context preserving and non-destructive manner.**

Using the FluidFM BOT system to perform cell isolation is really straightforward. Use our intuitive FluidFM ARYA operator software to select the cell that you wish to isolate by point-and-click. Once the hollow FluidFM micropipette has been loaded with trypsin (for detaching an adherent cell), the workflow starts: Trypsin is delivered by applying a controlled positive pressure through the FluidFM micropipette. After waiting a short time for the trypsin to take effect, a gentle negative pressure can be applied to pick up the cell. After moving to the designated well, the cell is deposited with appropriate positive pressure at the exact position that has been previously selected within the ARYA software. With suspension cell cultures, it is even easier: Just target, approach and pick-up the desired cell.

### SELECTED PUBLICATIONS.

O. Guillaume-Gentil, T. Zambelli & J.A. Vorholt. Isolation of single mammalian cells from adherent cultures by fluidic force microscopy. (2014) Lab on a chip, 14(2), 402-414. doi:10.1039/c3lc51174j



P. Stiefel, T. Zambelli & J.A. Vorholt. Isolation of optically targeted single bacteria by application of fluidic force microscopy to aerobic anoxygenic phototrophs from the phyllosphere. (2013) Applied and Environmental Microbiology, 79(16), 4895-4905. doi:10.1128/AEM.01087-13



P. Dörig, P. Stiefel, P. Behr, et al. Force-controlled spatial manipulation of viable mammalian cells and micro-organisms by means of FluidFM technology. (2010) Applied Physics Letters, 97(2), 023701 1-3. doi:10.1063/1.3462979



**STRAIGHTFORWARD**

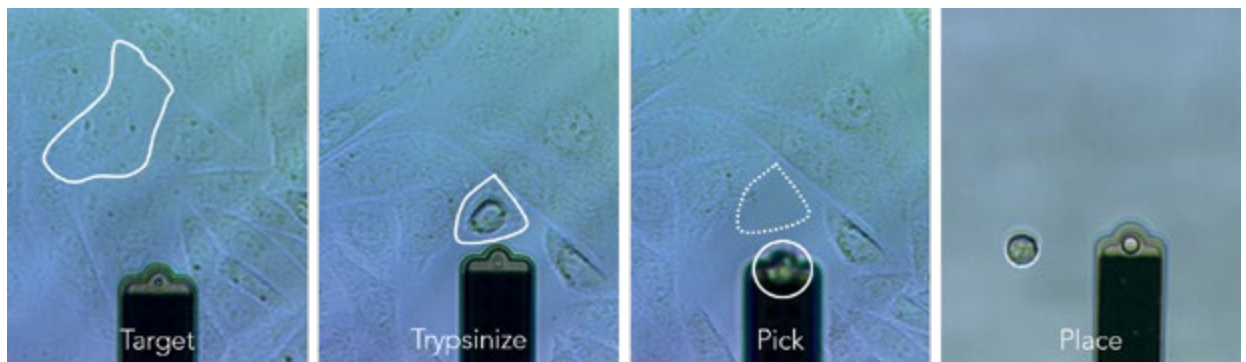
POINT & CLICK TO ISOLATE

**SIMPLE**

INTUITIVE SOFTWARE & WORKFLOWS

**CONTEXT PRESERVING**

DOES NOT DAMAGE THE CELL CULTURE



**FluidFM® CELL ISOLATION AT A GLANCE.** Isolation of an adherent CHO cell using the FluidFM BOT.

### CELL-CONTEXT PRESERVING & NON-DESTRUCTIVE.

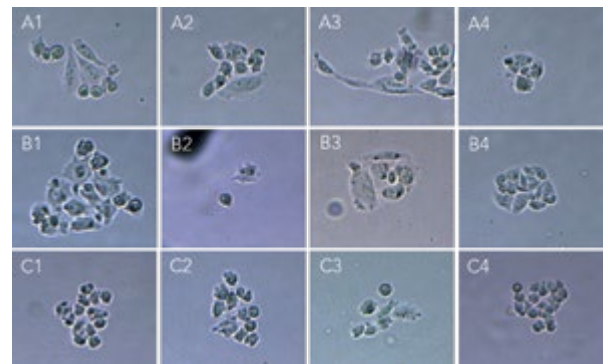
FluidFM BOT cell isolation is achieved in a cell-context preserving and non-destructive manner: The localized delivery of trypsin will detach only the targeted cell(s) and picking up a cell does not damage neighboring cells. The FluidFM micropipette was designed such that a droplet of the medium is always maintained around the picked-up cell, protecting it during the transfer to another well.

### HIGH CELL VIABILITY.

Cell isolation as described above using the FluidFM BOT system is very gentle and leads to ~ 95% cell viability after placing the cell in a new recipient. On the picture on the right, established colonies of CHO cells are shown in a 12-well plate (A1-C4) 48 hours after isolation. Combined with FluidFM nano-injection, FluidFM cell isolation is a powerful tool for scientists interested in fast and efficient production of newly transfected monoclonal cell lines.

### STAND-ALONE SYSTEM.

The FluidFM BOT system includes all the necessary equipment, including nanometer-precise XY- and Z- stages, a FluidFM microfluidics control system, optics, an incubator, an anti-vibration table, etc.



**HIGH VIABILITY.** ~ 95% of the cells isolated with the FluidFM BOT will survive and form a new monoclonal cell line.

## GENTLE

~ 95% CELL VIABILITY

## COMPLETE

STAND-ALONE SYSTEM

## GO BEYOND

CELL ISOLATION + OTHER APPLICATIONS

### MORE THAN CELL ISOLATION.

The hollow probe technology of FluidFM allows researchers to also perform other cutting-edge bioscience experiments on the same semi-automated FluidFM BOT system:



#### Single cell nano-injection

Perform FluidFM nano-injection with a vast variety of compounds into either cytoplasm or nuclei of adherent cells, in a cell-context preserving, non-destructive (cell viability ~ 95%), measurable (fl volumes) and fast (inject 100+ cells/hour) manner.



#### Single cell nano-extraction

Extract the content of individual adherent cells directly in their native environment while preserving the cellular context and without affecting cell viability.



#### Spotting

Print spots and high-density arrays with nanometer precision, useful for example in biosensing to create protein or DNA arrays.



#### Nanolithography

Print complex patterns with many types of biological particles at the nanometer scale.

**CYTOSURGE®**

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