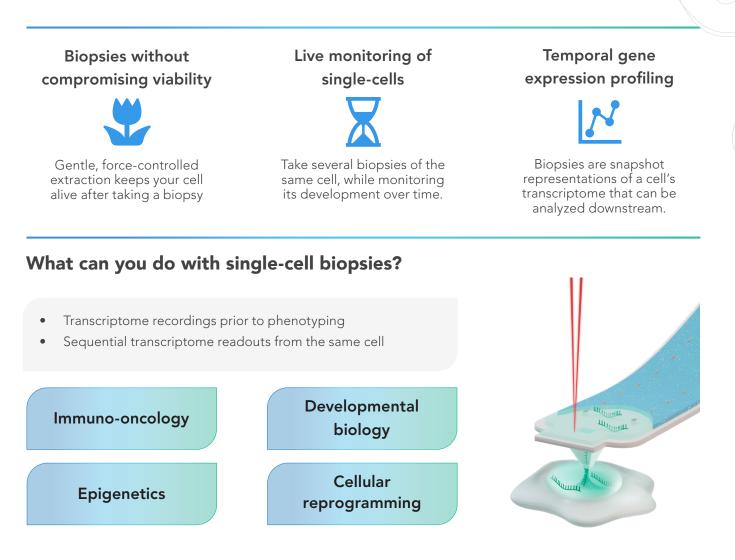
CYTOSURGE°

Temporal single-cell profiling on biopsies taken from living cells.

Recording gene expression changes throughout the life time of a single cell.

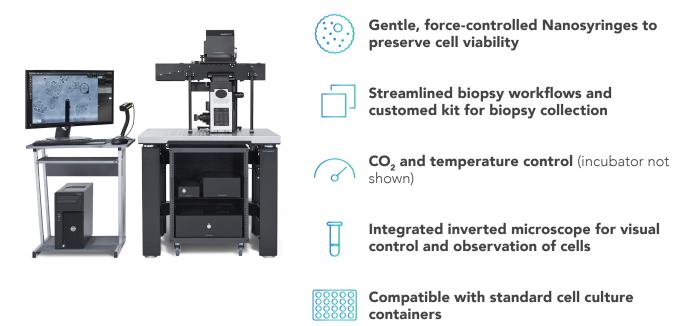
The specific cell chosen for analysis matters. Tumor heterogeneity challenges highlight that similar cells behave differently throughout their life paths. High throughput single-cell technologies brought many advances to better understand this, but statistical averaging still limits detection of relevant rare cell trajectories.

Imagine being able to follow these dynamic, life path changes in living, single cells. With the FluidFM OMNIUM platform, **you can take picoliter biopsies to follow evolution of living cells over time.**



FluidFM[®] OMNIUM system for sub-cellular biopsies

The FluidFM® OMNIUM is a standalone, easy-to-use, automated system with streamlined workflows for singlecell biopsy collection. The force-controlled micro-channelled probes enable highly gentle penetration of the cell membranes resulting in minimal cell perturbations and high viability. This allows you to extract and isolate subpicoliter volumes from a living single cell for further analysis.



What have biopsies been used for?

W. Chen et al. Live-seq enables Live-seq is an approach for single-cell transcriptome profiling that preserves temporal transcriptomic cell viability during RNA extraction using FluidFM. recordings of single cells (2022) 85% to 89% cell viability was preserved after taking a biopsy with an Nature, 608, 733-740 average extraction volume of 1.1 pL no major perturbations were observed compared to lysed cell transcriptomes. This approach shows the feasibility to couple a cell's ground-state transcriptome to its downstream molecular or phenotypic behaviour. O. Guillaume-Gentil et al. Single HeLa cells can be extracted by exerting underpressure through a Tunable Single-Cell Extraction custom FluidFM probe. for Molecular Analysis (2016) Extracted volumes could be estimated based on geometrical parameters Cell, 166 (2), 506-516 of the probes and optical monitoring during suction of the cellular content. Volumes up to 4pL could be extracted from HeLa cells with 82% viability rate. Maximum (median) extraction volume was estimated at 4.4pL. available from:

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