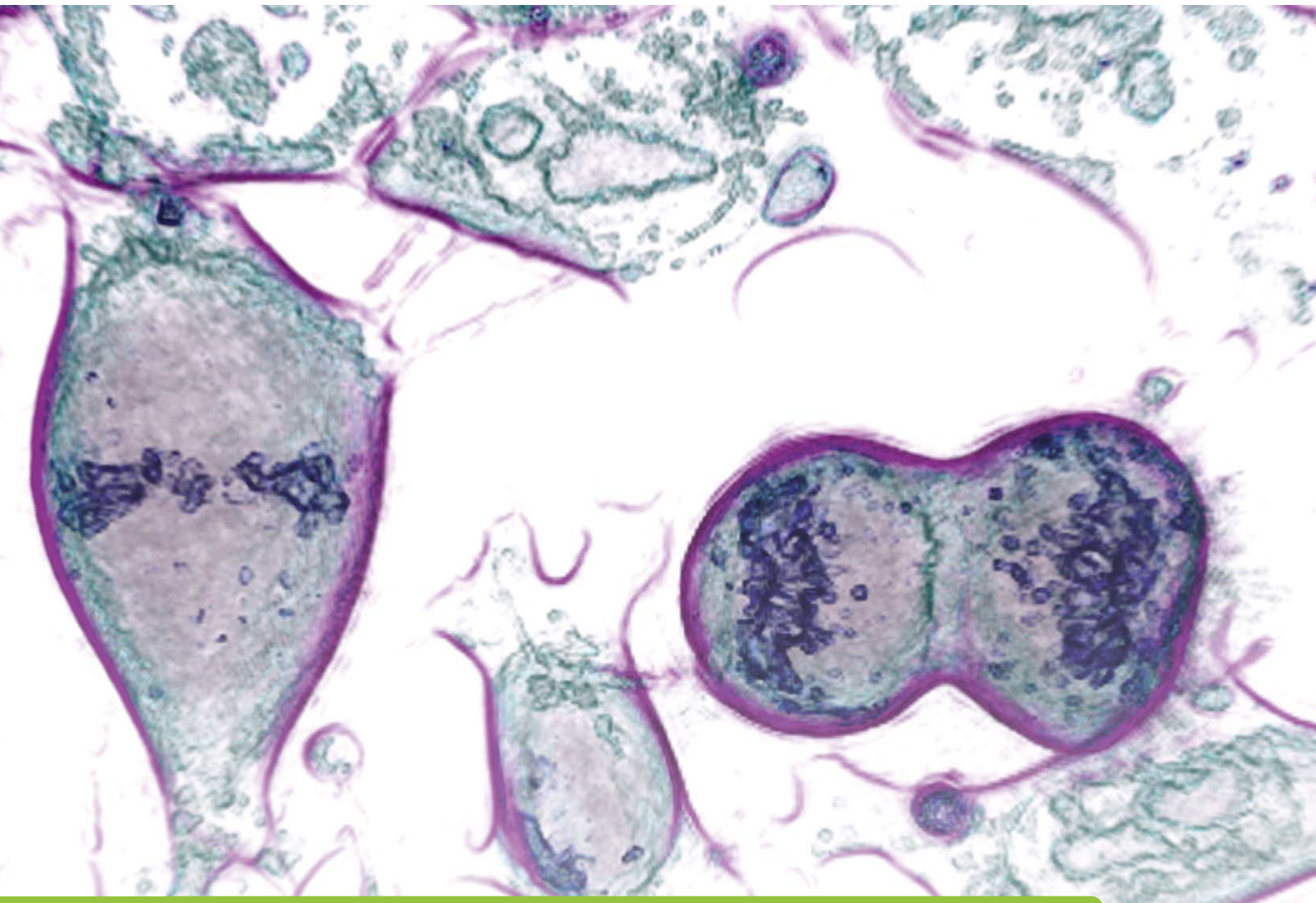
3D CELL EXPLORER

The revolutionary holotomographic microscope



Quantitative measurement of the whole cell in 3D

Infinite 4D continuous non-invasive observation at every second

Digital segmentation of cell organelles based on their refractive index

NANOLIVE

With the 3D Cell Explorer you can

Analyze the cell's inner structure and sub-structures in a non-invasive way

Explore and measure cell organelles with unprecedented detail and resolution, marker-free and preparation-free based on their own physical density.

Study cell life cycle processes of growth, division & death in 3D and 4D

Monitor all cell compartments and their kinetics and dynamics in real-time at every second without interfering with their natural functioning.

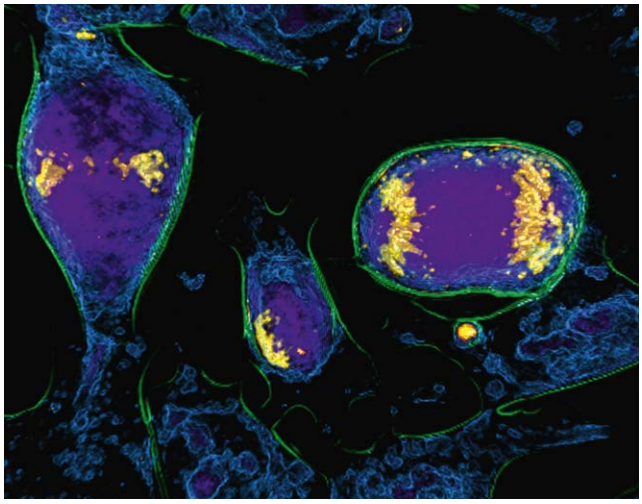
Keep your sample healthy as long as you need

Thanks to a dedicated top-stage incubator you can keep your cells in a controlled environment and physiological conditions while imaging them.

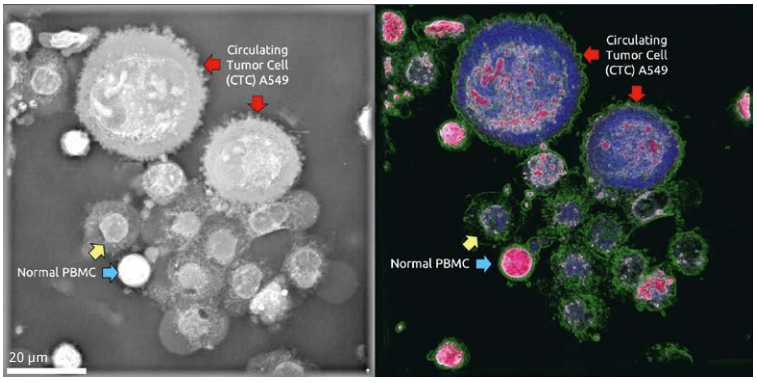
Looking inside life, as it is, in motion and 3D.

ANALYZE YOUR TRUE CELLS: DON'T LABEL THEM!

Perform label-free non-invasive accurate and quantitative 3D morphological & 4D spatio-temporal monitoring of living single cells and cell cultures at every second.



Mouse embryonic stem cells during mitosis. Cell metrics and DNA condensation can be monitored during the whole process.



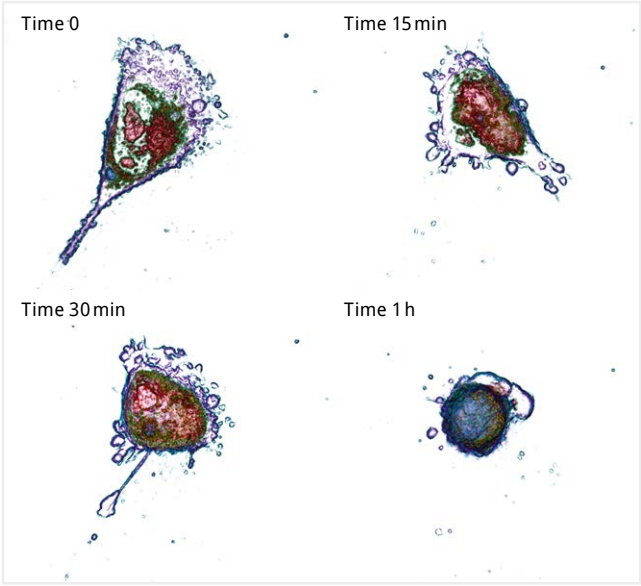
PERFORM MARKER-FREE CYTOLOGY & HISTOLOGY

Perform marker-free analysis of liquid biopsies, tissue & cell samples saving precious time and reducing sample manipulations.

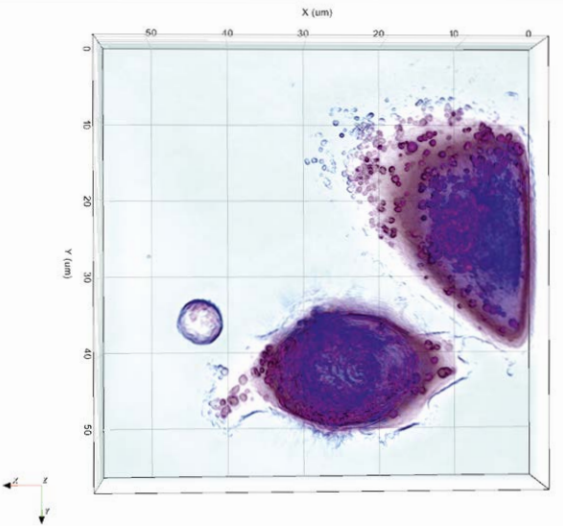
Whole blood sample spiked with A549 lung cancer cells and enriched for CTCs.
*PBMC: peripheral blood mononuclear cells

INVESTIGATE CELL CYCLE EVENTS IN 3D & 4D

Analyze cell division and cell death in a comprehensive way by observing your whole cell and its organelles in real-time.



Melanoma cells (Me 260.LN) undergoing Apoptosis.



UNDERSTAND CELL-CELL INTERACTIONS!

Unveil the secrets of cell-cell interaction, host-pathogen infection, phagocytosis, micro-organism internalization & intracellular 3D localization.

ID8-ova cells (ID8 murine ovarian tumor cell line transduced with ovalbumin) incubated with T-cells.

"The 3D Cell Explorer enables us to study chromatin condensation and nanoparticle uptake in live cancer cells which wouldn't be possible with other methods."

Clemens Grassberger, PhD
Research Fellow, Harvard Medical School & Radiation Oncology, Massachusetts General Hospital, Boston, USA

Why the 3D Cell Explorer?

INSTANT PREPARATION-FREE AND STAINING-FREE IMAGING

Are you tired of preparing and staining your samples? Our disruptive technology allows, for the first time, to explore instantly a living cell in 3D without any labeling or chemical marker.
No fixation + No labeling = No alteration of cells' normal physiology!

INFINITE LIVE CELL IMAGING

Get rid of bleaching and photo-toxicity: The 3D Cell Explorer uses a low power green laser light. Observe your living cells as long as you need in their natural state with a compatible top stage incubator.

QUANTITATIVE 3D/4D CELL DATA

The 3D Cell Explorer measures the quantitative refractive index of each cell's organelle at every second. Segment this data in 3D using our interactive digital stains based on the cell's physical refractive index.

ACCESSIBLE SAMPLE STAGE

Built to offer you all the space you need to work with a top stage incubator, microfluidic devices, micropipettors and many more.

NOVELTY

You want to be a pioneer in science? The 3D Cell Explorer is a tool for discovery and we are just at the beginning of exploring all the potential fields of application!

TECHNICAL SPECIFICATIONS

Resolution	$\Delta x,y = 200\,nm$; $\Delta z = 400\,nm$
Field-of-view	$85 \times 85 \times 30\,\mu m$
Tomography frame rate	0.5 fps 3D image rate with full self-adjustement
Objective	Dry objective / 60× magnification / NA 0.8
Laser	Class 1 low power laser ($\lambda = 520\,nm$, sample exposure $0.2\,mW/mm^2$)
Accessible sample stage	60 mm of free access to the sample stage for sample manipulation

Nanolive SA | www.nanolive.ch | mail@nanolive.ch | +41 21 353 90 00
EPFL Innovation Park | Chemin de la Dent d'Oche 1a | 1024 Ecublens | Switzerland