



# 3D CELL EXPLORER

## TAKE YOUR CELL RESEARCH TO THE NEXT DIMENSION

### NON-INVASIVE 3D CHARACTERIZATION

Live cell imaging in physiological conditions without any bleaching or phototoxicity

### LABEL-FREE 4D CONTINUOUS OBSERVATION

Measurement of cell processes from seconds to weeks

### MULTIPLEXING

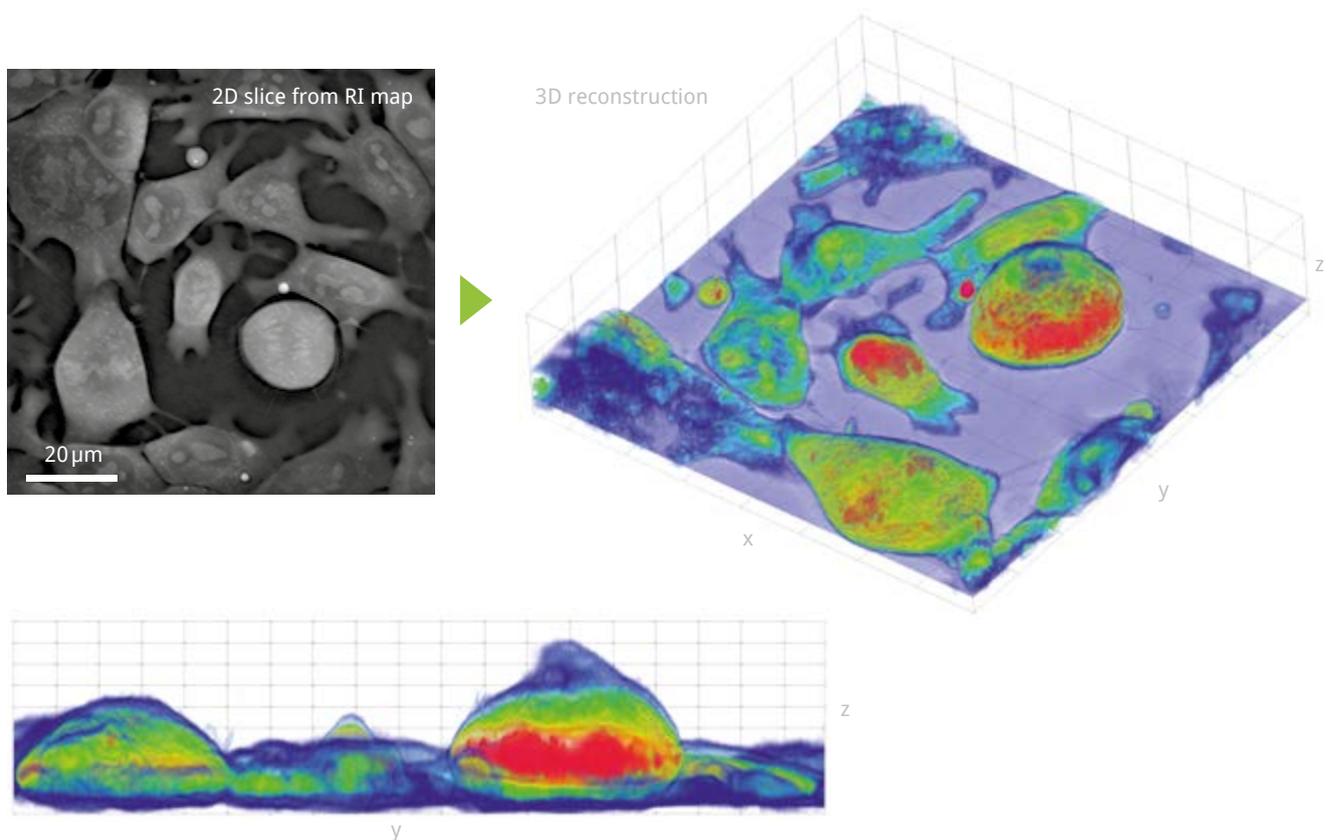
High resolution and high sensitivity characterization of multiple cell organelles based on their refractive index

# THE HOLOTOMOGRAPHIC MICROSCOPE

# LOOK DEEPER

## NON-INVASIVE 3D CHARACTERIZATION OF LIVE CELLS IN PHYSIOLOGICAL CONDITIONS

The 3D Cell Explorer measures the quantitative refractive index of cell organelles in seconds. Hence, it is possible to do non-invasive *in vitro* imaging of almost any kind of cells with up to 30  $\mu\text{m}$  depth of reconstruction. This allows for biological features to be segmented based on their physical characteristics.



Mouse embryonic stem cells (mESCs) undergoing cell division visualized in 3D



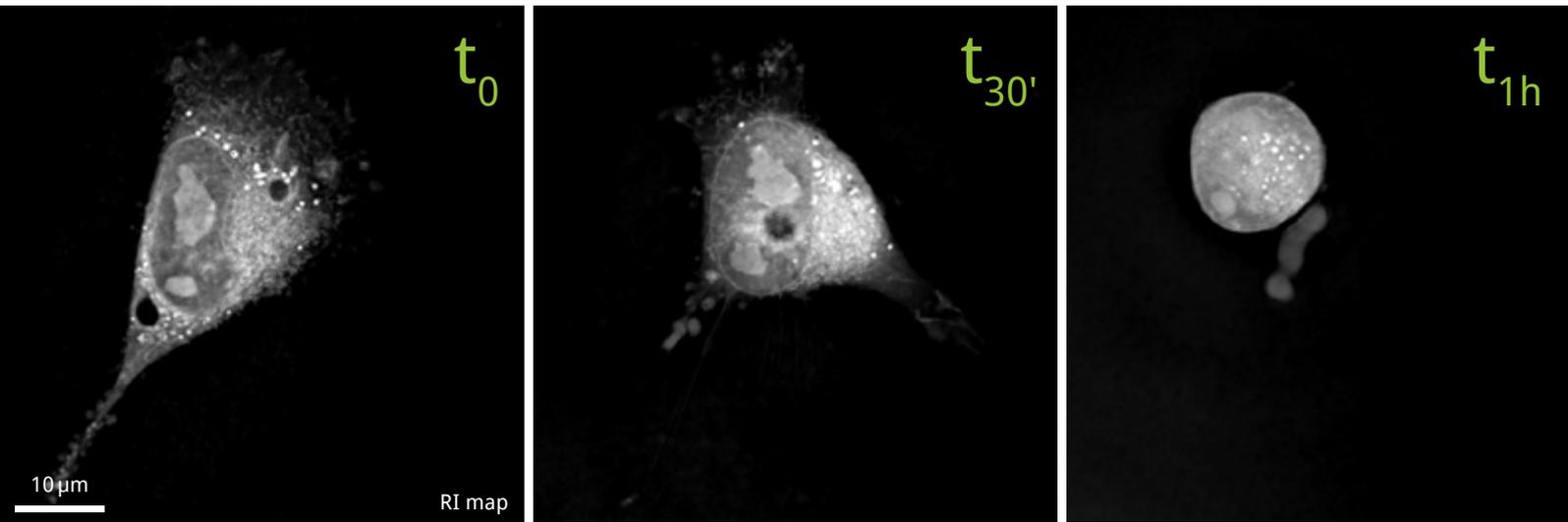
**THE 3D CELL EXPLORER IS ABSOLUTELY FANTASTIC! ITS EASE OF OPERATION, INTUITIVE NATURE, COMPACT SIZE, RAPID IMAGING AND NO NEED FOR STAINS MAKE THIS A SYSTEM I WOULD CERTAINLY RECOMMEND.**

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# LABEL-FREE 4D CONTINUOUS OBSERVATION OF CELL PROCESSES FROM SECONDS TO WEEKS



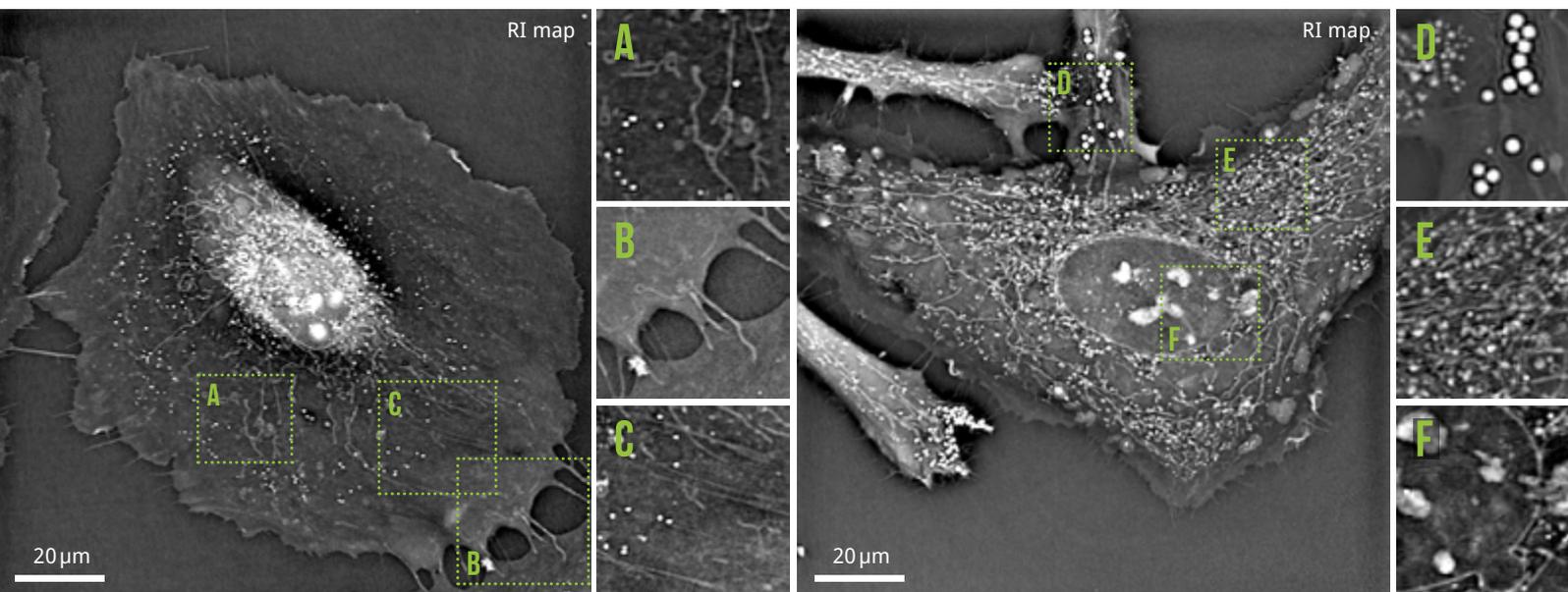
Study cell life cycle processes of growth, division & death in 3D and 4D. Thanks to a dedicated top-stage incubator you can monitor cell compartments and their kinetics and dynamics in real-time at every second without interfering with their natural physiology.



T685A human melanoma cell undergoing apoptosis

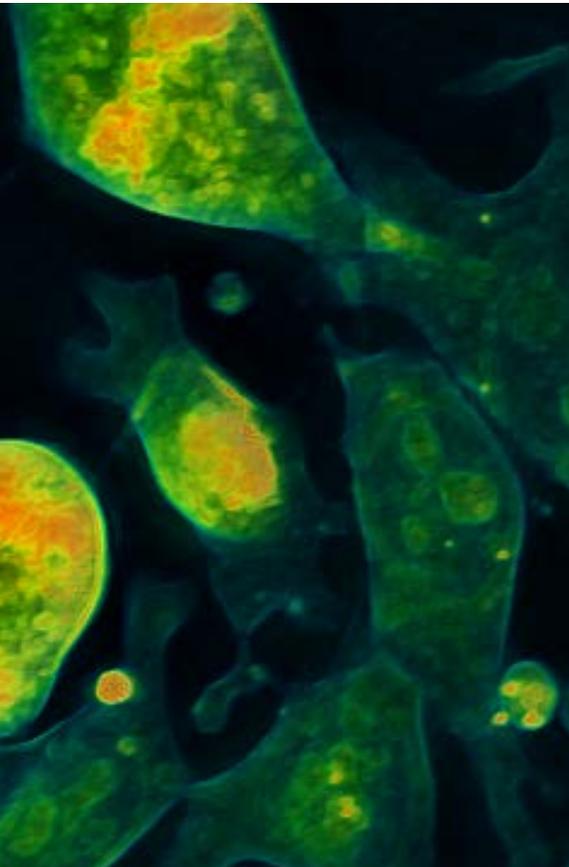
## MULTIPLEXING

High resolution and high sensitivity characterization of multiple cell organelles based on their refractive index. Explore and measure up to 8 cell organelles simultaneously with unprecedented detail and resolution, marker-free and preparation-free based on their own physical density.



Mouse fibroblasts and their internal compartments: a. mitochondria; b. plasma membrane; c. actin fibers; d. lipid droplets; e. lysosomes; f. nuclear envelope, nucleus & nucleoli.

# DISCOVER MORE



## EXPLORE A NEW VISION

Label-free unstained 3D cells  
Long observation time  
New space for discoveries

## 3D DATA SETS

Multiplexing, unique organelle segmentation  
Quantitative data analysis

## SAVE EXPERIMENTAL TIME

No sample preparation  
Short setup time  
Fast & easy acquisition

## COMPATIBLE SAMPLE STAGE

Top-stage incubator, pipettors, microfluidic devices, ...

## TECHNICAL SPECIFICATIONS

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



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