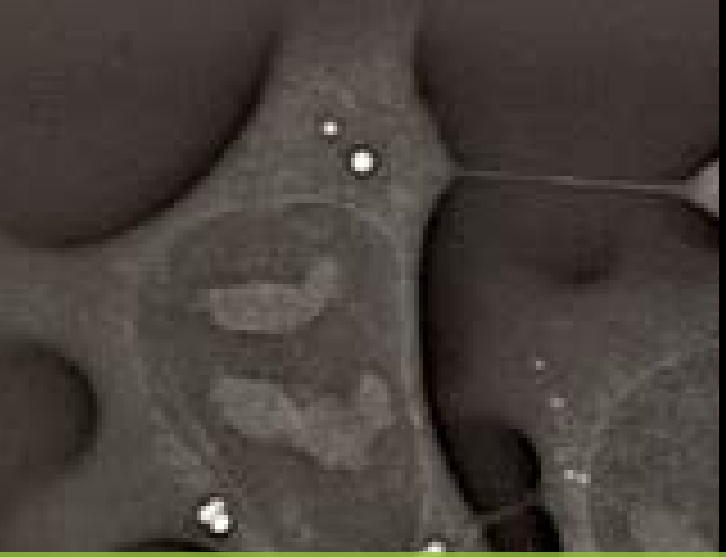


NANOLIVE
Looking inside life

3D CELL EXPLORER-*fluo*

COMBINE THE BEST OF TWO WORLDS

COMPLETE 3D SOLUTION
Combine high quality tomographic data with fluorescent markers

MULTIPLEXING
Explore up to 10 markers in parallel

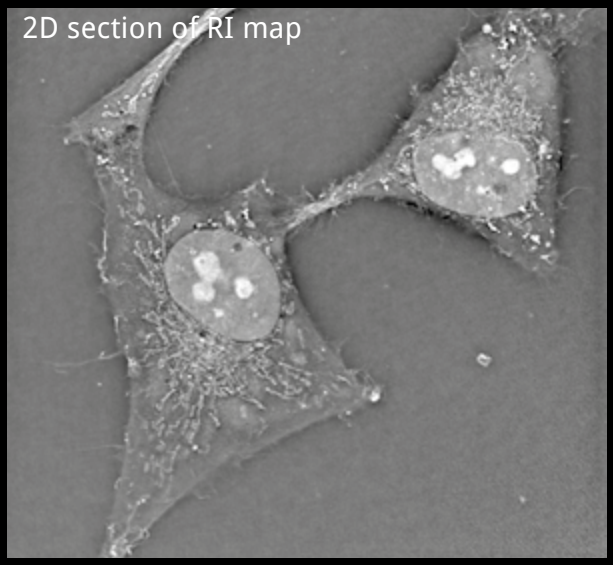
EXTENDED LIVE CELL IMAGING
Limit cell damages caused by fluorescent markers, bleaching and phototoxicity

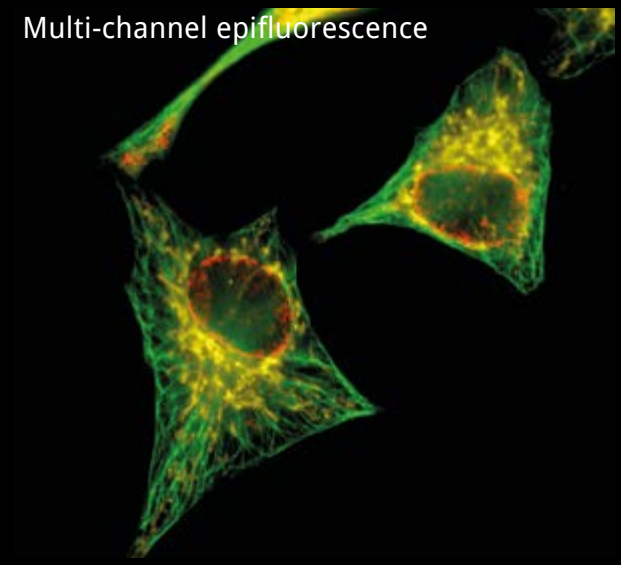
THE HOLOTOMOGRAPHIC FLUORESCENCE MICROSCOPE

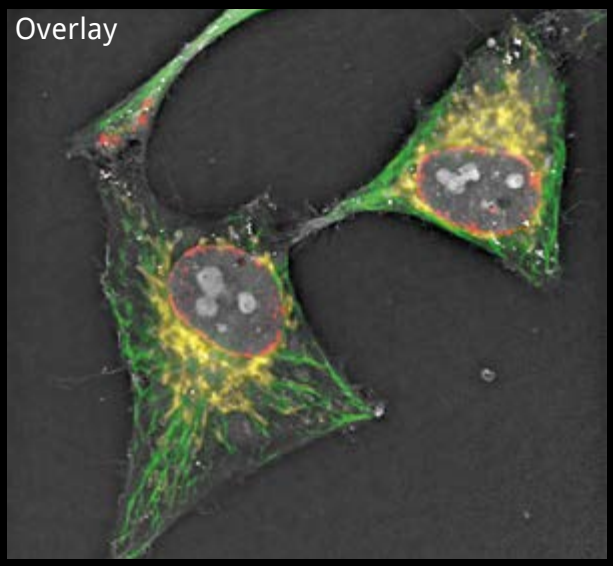
REVOLUTIONARY TECHNOLOGY

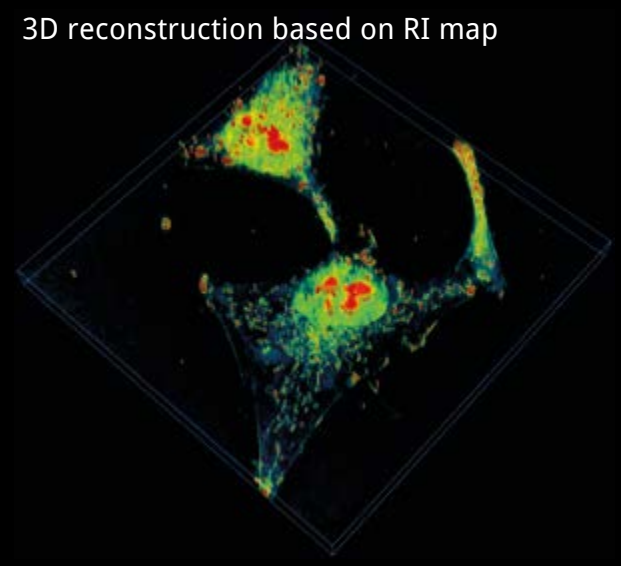
MULTIMODAL COMPLETE SOLUTION FOR 3D LIVE CELL EXPLORATION

Combine 3D refractive index analysis with a fully integrated 3 channel fluorescence module to image your live cells as they are and as long as you want. Put chemical information into structural context for new biological insights.







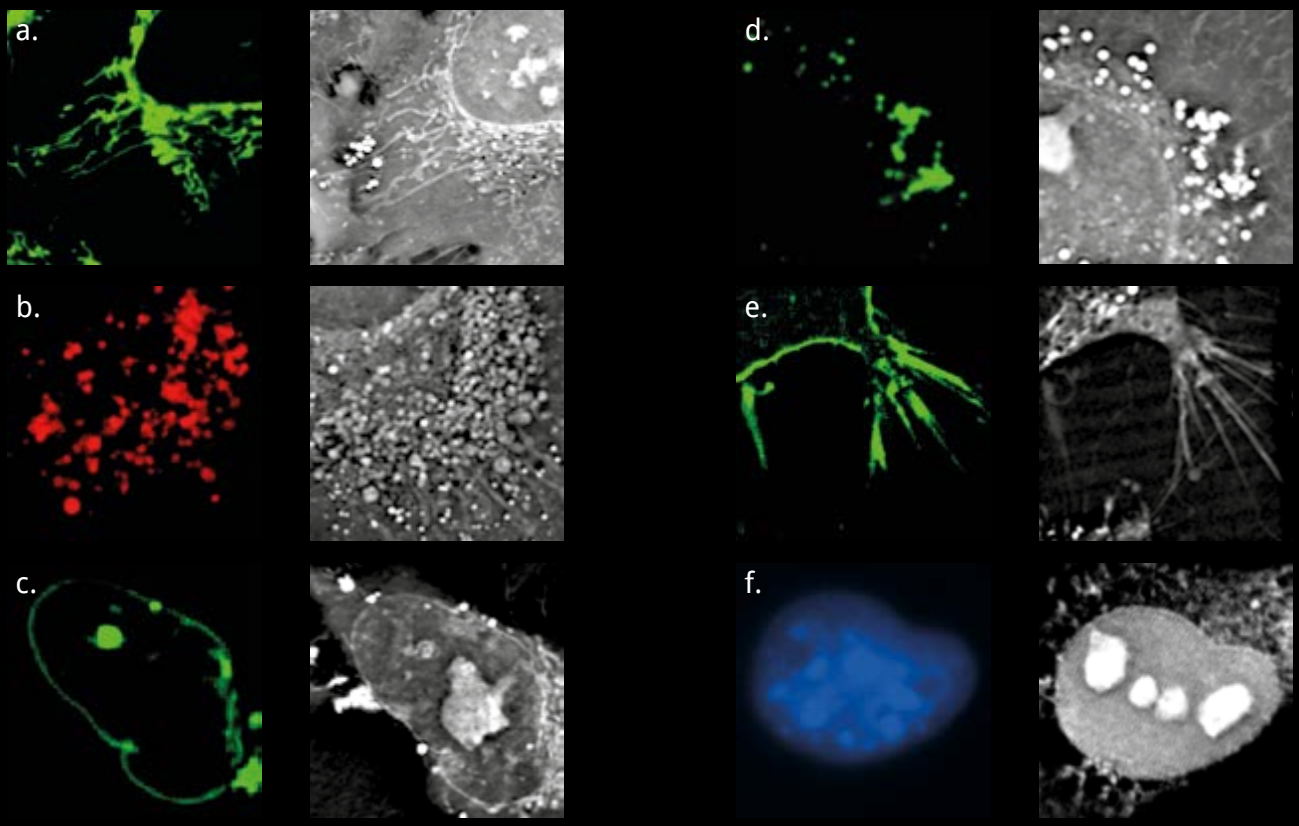


> IN A VERY SHORT PERIOD OF TIME, THE 3D CELL EXPLORER HAS BECOME VERY INTENSIVELY USED AND WE HAVE FOUND APPLICATIONS IN SEVERAL DIFFERENT DISEASE AREAS – WE WOULD NOT WANT TO BE WITHOUT THIS INSTRUMENT.

Oliver Nayler, PhD
Senior Director, Head Cardiovascular & Fibrosis Biology
Idorsia Pharmaceuticals Ltd, Allschwil, Switzerland

MULTIPLEXING

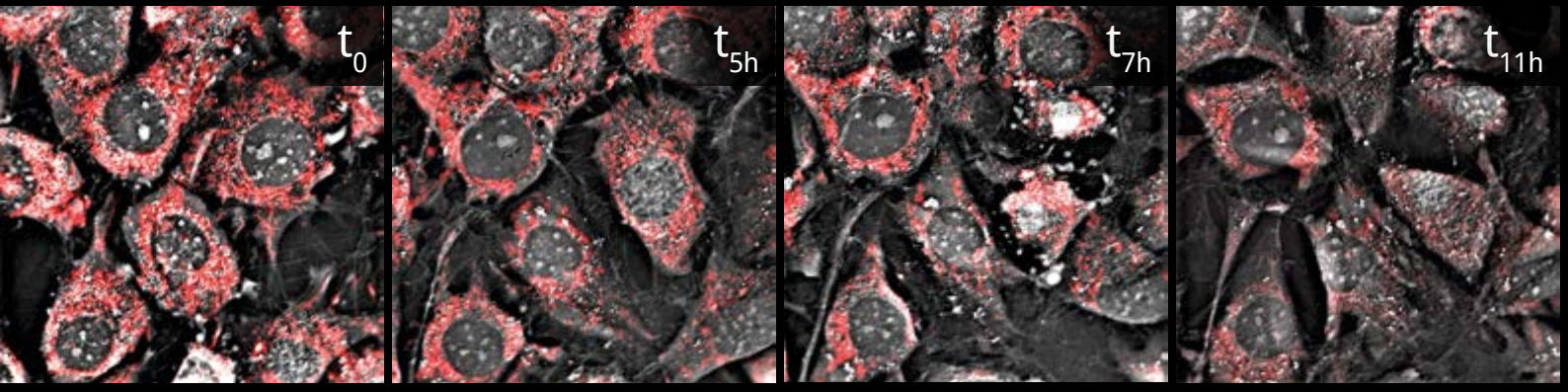
Transform 2D fluorescence into 3D cell tomography: Identify cell organelles through fluorescence and monitor non-invasively their structures & dynamics in 3D & marker-free. Explore fluorescence (3 channels) & Digital Stains (8 channels) simultaneously.



Examples of co-localization for a. mitochondria, b. lysosomes, c. nuclear membrane, d. lipid droplets, e. plasma membrane, f. nucleus & nucleoli.

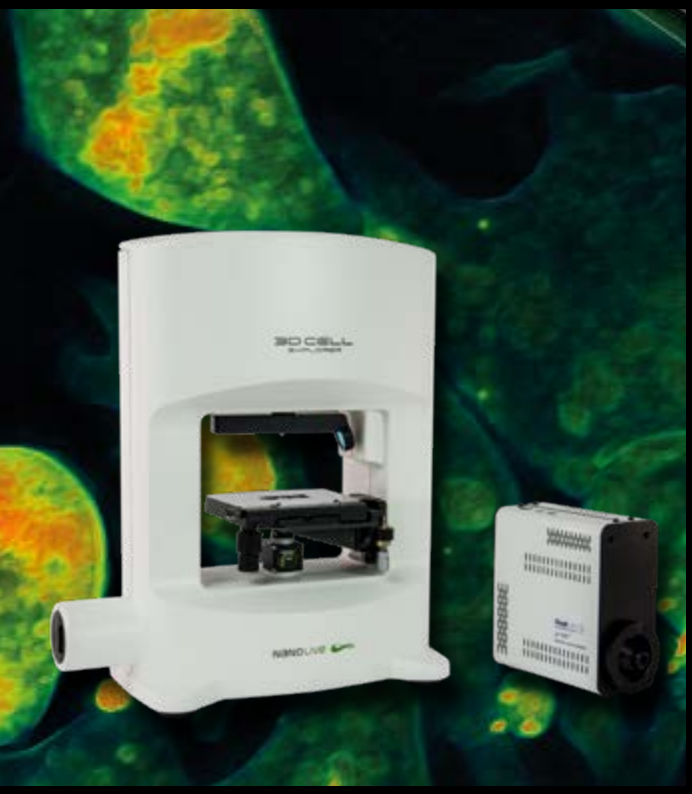
EXTENDED LIVE CELL IMAGING

Image your live cells as long as you need. Limit cell damages caused by fluorescent markers, bleaching and phototoxicity.



Long-term imaging (11hrs) of mouse pre-adipocytes. Mitochondria were labeled with mitoTracker. A holotomographic image was taken every 15 seconds and a fluorescence image every 5 minutes.

DISCOVER MORE



EXPLORE A NEW VISION
Long observation time
New space for discoveries

IMPROVE KNOWLEDGE
Combine fluo and RI tomography
Up to 10 markers in parallel

PROCESS NEW DATA SETS
Unique organelle segmentation
Quantitative data analysis

SAVE EXPERIMENTAL TIME
No preparation
Short setup time
Fast & easy acquisition

TECHNICAL SPECIFICATIONS

Illumination Source	Holotomography: Class 1 low power laser (λ = 520 nm, sample exposure 0.2 mW/mm²) Fluorescence: High speed switchable <100 µm, Lifetime > 20'000 hours each channel
Resolution	Holotomography: x,y: 200 nm; z: 400 nm (3D image) Fluorescence: rx,y: ~ 400 nm (2D image)
Field-of-view	Holotomography: 90 × 90 × 30 µm Fluorescence: 90 × 90 µm
Microscope Objective	Dry objective / 60 × magnification / NA 0.8
Channels	Holotomography: Up to 7 simultaneous Fluorescence: DAPI + FitC + TritC | FitC + TritC + Cy5 | DAPI + FitC + TritC / Cy5
Imaging	Holotomography: 3D Fluorescence: 2D 4D time lapse: (RI + fluo)
Time resolution	Holotomography: 0.5 fps 3D RI frame Fluorescence: 3 fps each channel
Camera	USB 3.0 CMOS Sony IMX174 sensor / Quantum Efficiency (typical) 70 % (at 545 nm) / Dark Noise (typical) 6,6 e^- / Dynamic Range (typical) 73,7 dB
Dimensions (width × depth × height in mm)	3D Cell Explorer-*fluo*: 380 × 170 × 445 Fluorescence module: 77 × 186 × 162
Weight	12 kg

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