



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

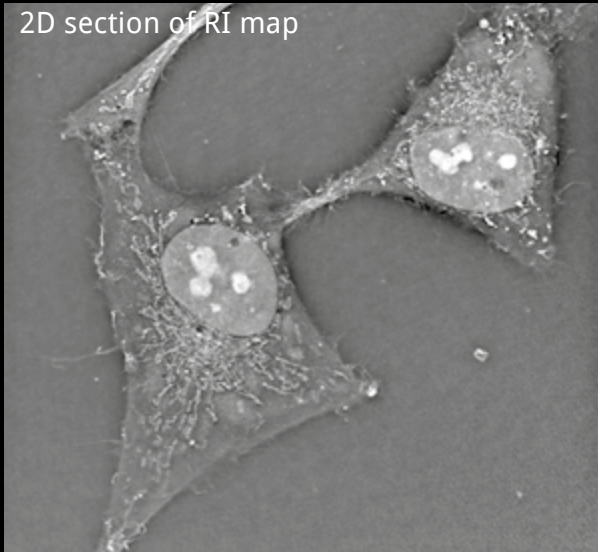
THE HOLOTOMOGRAPHIC FLUORESCENCE MICROSCOPE

REVOLUTIONARY TECHNOLOGY

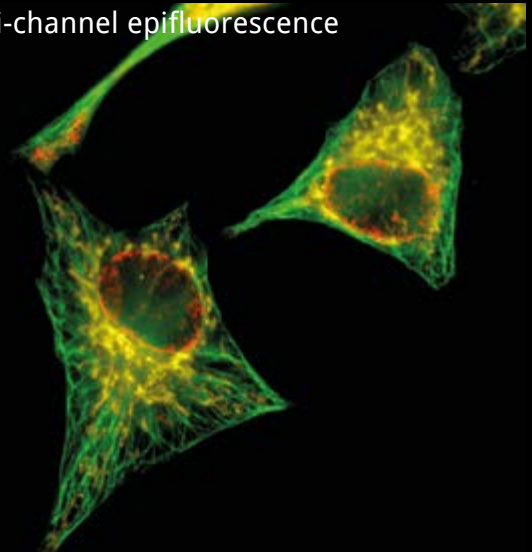
MULTIMODAL COMPLETE SOLUTION FOR 3D LIVE CELL EXPLORATION

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.

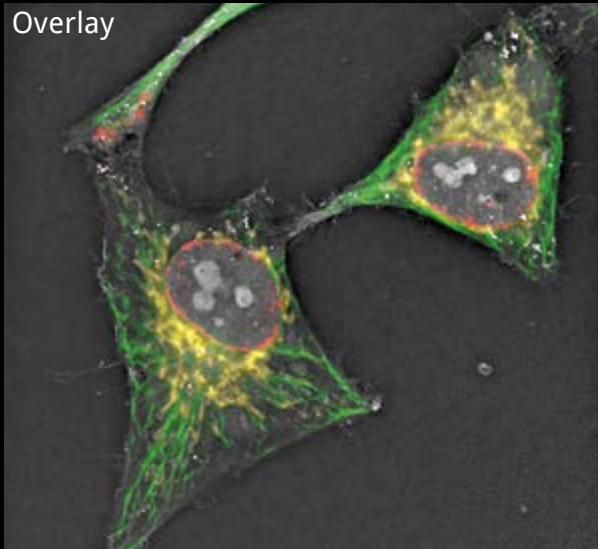
2D section of RI map



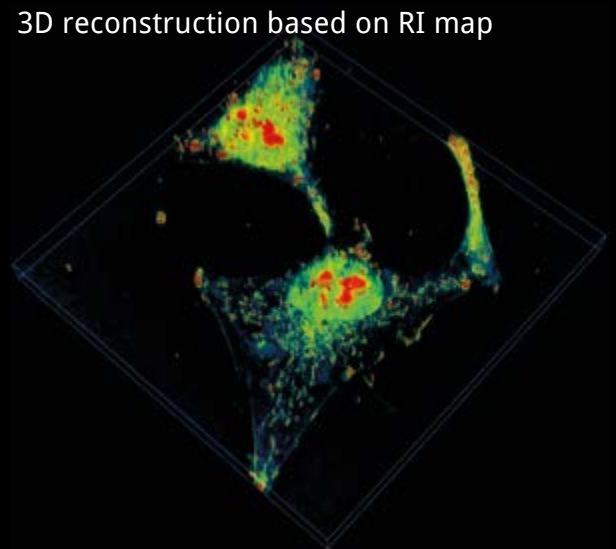
Multi-channel epifluorescence



Overlay



3D reconstruction based on RI map

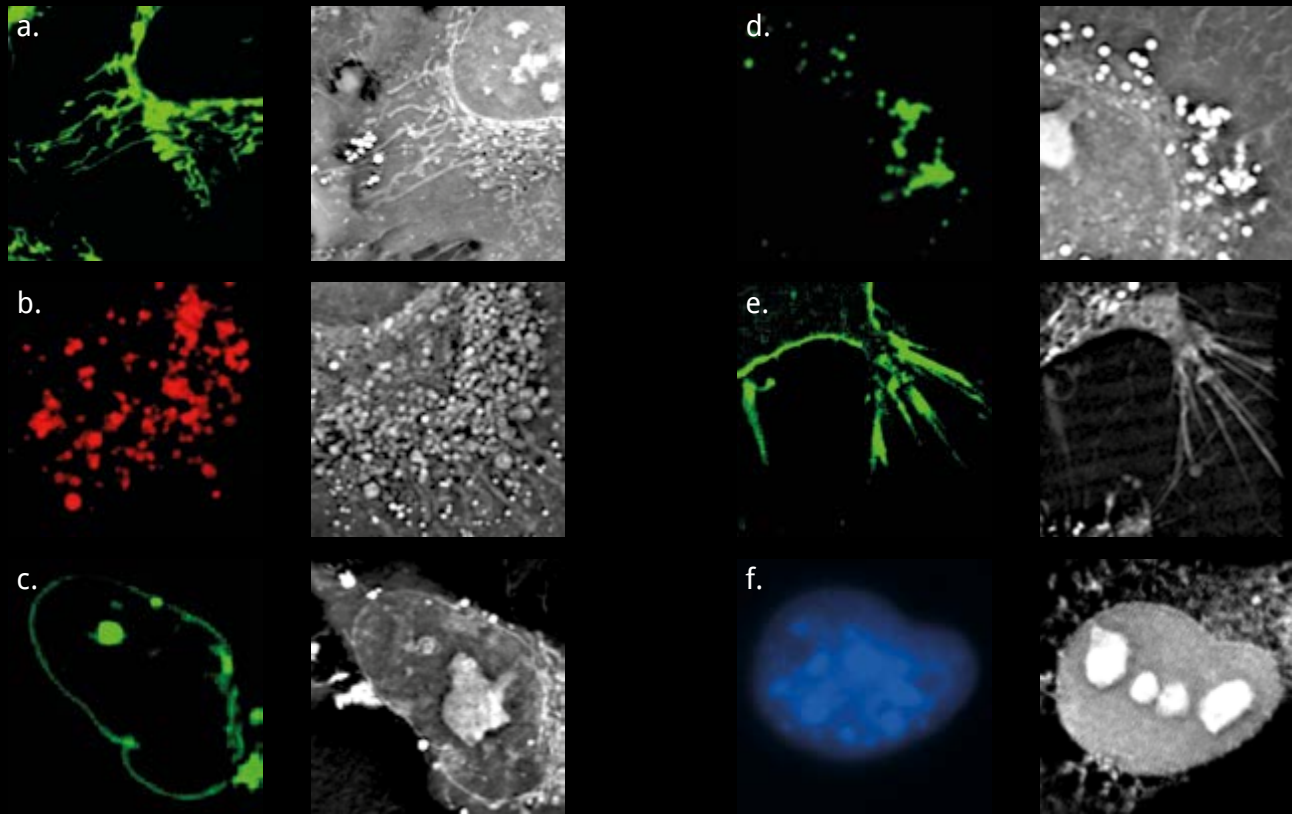


IN A VERY SHORT PERIOD OF TIME, THE 3D CELL EXPLORER HAS BECOME VERY INTENSIVELY USED AND WE HAVE FOUND APPLICATIONS IN SEVERAL DIFFERENT DISEASE AREAS — WE WOULD NOT WANT TO BE WITHOUT THIS INSTRUMENT.

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MULTIPLEXING

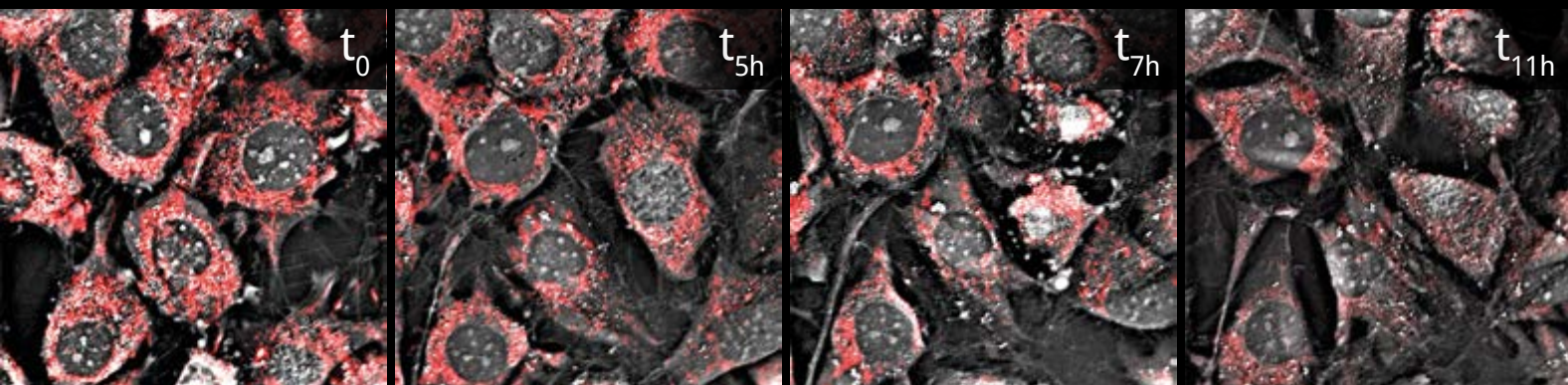
Transform 2D fluorescence into 3D cell tomography: Identify cell organelles through fluorescence and monitor non-invasively their structures & dynamics in 3D & marker-free. Explore fluorescence (3 channels) & Digital Stains (8 channels) simultaneously.



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 ($\lambda=520$ nm, sample exposure 0.2 mW/mm ²) Fluorescence: High speed switchable <100 μ m, 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: $90 \times 90 \times 30$ μ m Fluorescence: 90×90 μ m
Microscope Objective	Dry objective / 60 \times 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) $6,6e^-$ / Dynamic Range (typical) 73,7 dB
Dimensions (width \times depth \times height in mm)	3D Cell Explorer-fluo: $380 \times 170 \times 445$ Fluorescence module: $77 \times 186 \times 162$
Weight	12 kg



Nanolive products are distributed in Australia and New Zealand by AXT Pty. Ltd.
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