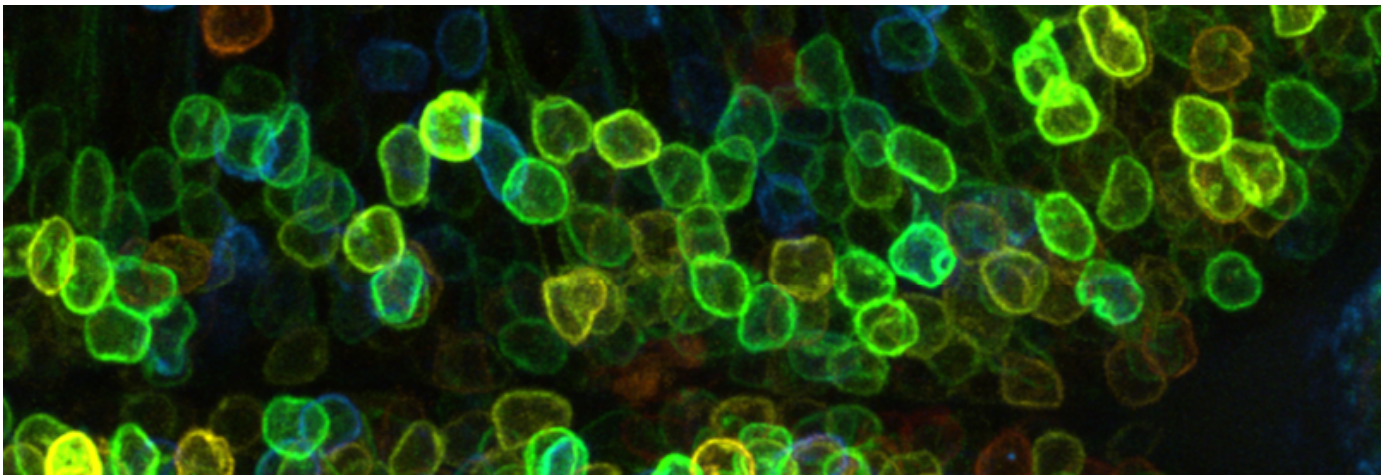# Get more biological relevance through living samples

ZEISS LSM 900 Live Cell Imaging

Plasma membrane-localized expression of Wnt3-EGFP in the developing optic tectum of 4-day-old Tg zebrafish. Sample Courtesy of C. The, Centre for Bioimaging Sciences, Singapore

To gain physiologically relevant insights, it is crucial to observe living cells. However, live cell imaging using confocal microscopy poses significant challenges. You need to capture the dynamic cytoskeleton structures quickly, resolve the subcellular organelles with sufficient details, detect the weakly-expressed transgenic cell lines with sensitivity, and maintain the health of the cell throughout the experiment.

The ZEISS LSM 900, with market-leading sensitivity, a fast linear scanner, and an integrated LSM Plus algorithm, is ready to take your live cell imaging to the next level.

The ZEISS LSM 900 Live Cell Imaging

The ZEISS LSM 900 Live Cell Imaging package is designed for stable long-term observation of sensitive cells. This package contains three sensitive GaAsP detectors to detect the faintest signals in multiple fluorescence channels, a fast hardware stabilization device to keep the focus stable, and flexible on-stage incubation systems to keep your cells healthy. The powerful ZEN software brings you from sample to knowledge.

Applications

- Live cell imaging
- Well plate screening
- Large tissue stitching
- Multi-channel fluorescence imaging
- 3D imaging

Highlights

- Definite Focus 3: Definite Focus 3 compensates thermal drifts during live cell imaging and keeps your sample in focus. With high speed, precision, and reliability, even your most challenging multi-days, multi-position time-lapse experiments will yield sharp images.
- Smart Acquisition: This group of fully automated acquisition tools provides you with full flexibility when designing heterogeneous experiments, rare event detection applications, and adaptive or conditional experiments
- LSM Plus: LSM Plus provides a unique confocal experience, by effortlessly improving all your multi-color and live cell acquisitions experiments with a system-optimized linear deconvolution algorithm.

ZEISS LSM 900 Live Cell Imaging
The Package Components

Microscope

- Axio Observer 7
- Scanning stage 130 × 100
- Definite Focus 3

Light source / Detectors

- Laser: 405, 488, 561, 633
- Colibri 5 RGB-UV with Filter sets 90 HE LED
- 3x GaAsP-PMT

Objectives

- Plan-Apochromat 10x/0.3
- Plan-Apochromat 20x/0.8
- Plan-Apochromat 63x 1.4 Oil
- LD LCI Plan-Apochromat 40× /1.2 ImmCorrDIC

Workstation / Monitor

- Microscopy Workstation Z2 G5 with 64 GB RAM and NVIDIA Quadro P1000 4 GB
- Monitor TFT 27" HP E27u G4

ZEN software modules

- Newest ZEN license
- ZEN Toolkit Advanced Acquisition: acquire and process multi-dimensional images with intuitive tools
- ZEN Toolkit Smart Acquisition: Design automated imaging workflow through Guided Acquisition, Experiment Designer, and Experiment Feedback
- ZEN Toolkit 2D: Use advanced processing and image analysis for image data
- ZEN Toolkit 3D: Visualize and analyze 3D image stacks
- ZEN Module LSM Plus: real time linear deconvolution to improve resolution and SNR of all confocal images

LSM 900 beam path

Click here to view this video
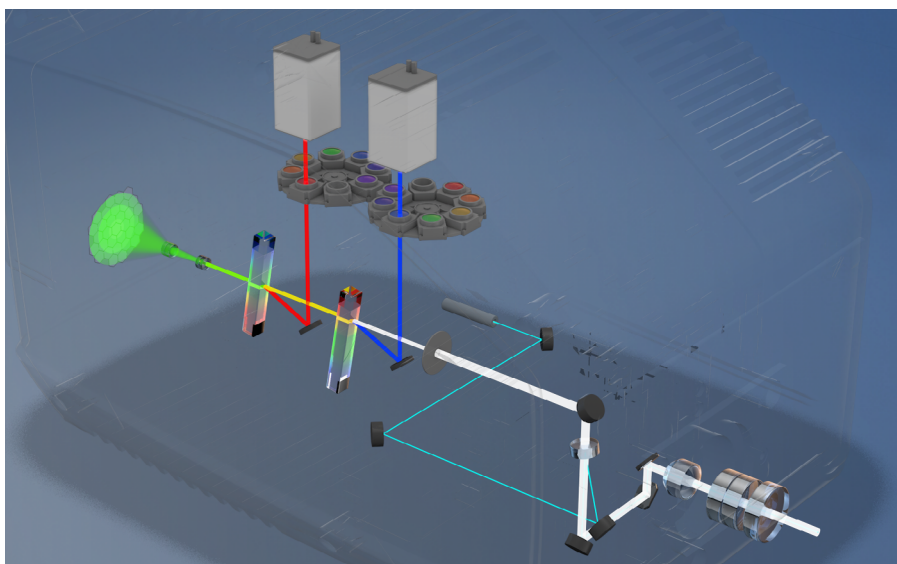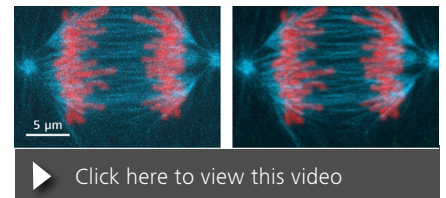
Live imaging of LLC-PK1 dividing cell (porcine kidney), expressing H2B-mCherry (red) and α-Tubulin-mEGFP (cyan). Maximum intensity projection of 37 Z-planes.

microscopy@zeiss.com
zeiss.ly/lsm-900-airyscan-2

ZEISS

Seeing beyond