

Leica HCS LSI – Zebrafish High Content Screening Automation

Explore new dimensions of imaging!

- High content screening in 4D by true confocal imaging
- From micro to macro with adaptive zoom optics
- Maximum flexibility for efficient assay development

Living up to Life



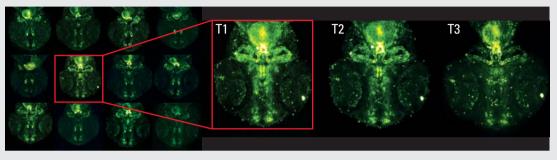
Leica HCS LSI – Explore the New Dimensions of Imaging!

Excellent confocal images provide the perfect start for optimal results. Large Scale Imaging overcomes the limits of conventional microscopes: With adaptive zoom optics, easily track the zebrafish development from egg to embryo. The innovative Leica HCS LSI application solution offers the flexibility needed to scale

up *in vivo* assays efficiently: match acquisition, automation and analysis to achieve reproducible results with minimal effort. Leica HCS LSI adapts to your experiment needs and provides 2D, 3D, and 4D screening results, fast and reproducible.

4D Multiwell Assav

Automated 4D imaging discloses the spatio-temporal dynamics of fluorescent signals throughout the development.



Top: 4D series of 2 day old zebrafish embryos (*Danio rerio*). Ventral views of embryonic brains of the ETvmat2:gfp stable transgenic line were automatically acquired every 38 min. GFP: Monoaminergic neurons in the brain and ectopic expression in heart and blood vessels. The embryos were arrayed in 96-well plates. The regions of interest (brains) were manually selected using the Leica Mark and Find mode and subsequently imaged at high resolution. Courtesy of Dr. J. Gehrig, KIT – Karlsruhe Institute of Technology, Institute of Toxicology and Genetics (ITG), Karlsruhe, Germany.

Front page: Continuous optical zoom of transgenic embryo, *Danio rerio*; GFP; Epithalamus; Optic Tectum. Leica Z6 APO A optical zoom with 5x Objective. Courtesy of K. Palma, MV, N. Guerrero; L. Armijo, Laboratory of Experimental Ontogeny (LEO), Dr. S. Hertel, Laboratory of Scientific Image Analysis (SCIAN-Lab). E. DCM, Programa de Anatomía y Biología de Desarrollo, ICBM, Facultad de Medicina, Universidad de Chile, Santiago, Chile.

Leica HCS LSI – turning zebrafish into data!

The circle of assay development

Optimization















Analysis





Acquisition

High content with true spectral confocal technology

- Spectral analysis from 430 to 750 nm
- Robust solid state lasers 405-488-561-635 nm
- Environmental chamber with large workspace
- Multidimensional acquisition

Adaptive optical zoom - Discover the ease

- Infinitely adjustable magnification without objective change
- Large working distance, maximum 16 mm field of view

HCS A – Intelligent system automation

- Pre-screen and secondary screen in one system
- · Well plate screening, auto focus, single object tracking
- Assign multiple jobs to multiple positions
- Trigger the system by image analysis: External system control via Computer Aided Microscopy (CAM) interface

$\label{eq:continuous} \textbf{Optional image analysis} - \textbf{Quantify your experiments}$

- OME.TIF export connects optimally to existing algorithms
- Sophisticated the Leica edition of Definiens Developer XD:meta data import, object recognition and report result
- Multidimensional analysis, freely programmable



