Leica TCS SP8 HyD confocal microscope

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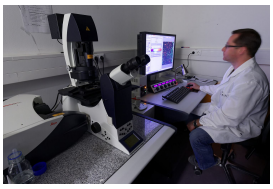

Brand

Leica Microsystems

Type

SP8

Contact

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Organisation

Plant Sciences Group

Department

Laboratory of Molecular Biology

Description

This (inverted) confocal Leica TCS SP8 HyD microscope allows super sensitive imaging due to the Leica HyD hybrid detector. This detector combines low noise with high signal levels, with superior signal-to-noise ratios as result. This microscope allows for a reduction of the light dosage delivered to the sample, ideal for light sensitive samples/cells and weak signals (less bleaching). The fast sampling rate is also ideal for photon counting.

In addition to the hybrid detector (HyD) , a normal photomultiplier (PMT) detector is available for multi-channel (sequential) imaging.

Technical Details

Lasers:
Solid state lasers for excitation wavelengths: 405 nm (3 mW), 488 nm (20 mW) and 552 nm (20 mW).
Detectors:

- PMT SP confocal detector for imaging
- HyD SP GaAsP detector for gated imaging

Acousto-optical beam splitter allows for gapless spectral detection.
More information about the Leica HyD detector
Available objectives:

- HC PL FLUOTAR 10x/0.30
- HC PL APO 40x/1.10 water motCORR CS2 (DIC)
- HC PL APO 63x/1.40 oil (DIC)

Microscope stage
Super Z Galvo Stage Type H

Applications

The Leica TCS SP8 HyD confocal microsope can be used for high sensitive imaging, FRET - FRAP, to quantify relative signal intensities, for time-lapse recording and for z-series for 3-4D imaging. It allows excitation at 405nm, 488 nm and/or 552 nm.
Imaging samples
Visualization of a symbiotic interface: a Medicago truncatula root cortex cell containing an arbuscule.
a. GFP-SYNTAXIN122 labeling of the plasma membrane, arbuscule trunk domain and fine branches
b. DsRED labeling of cytoplasm and nucleus
c. DIC bright-field image
d. Merged image of a, b and c

From: Huisman et al., New Phytol. doi: 10.1111/nph.13973.