

Multiphoton excitation of Atto 647N at 1200 nm

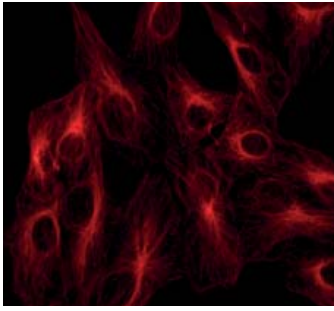
Leica OPO Solution

Expand Deep Tissue Imaging into the Red

- Gap-free tuning of multiphoton excitation from 680 to 1300 nm
- Multiphoton imaging with novel red-shifted fluorescent proteins and dyes
- Convenient wavelength selection by intuitive software

Living up to Life

Leica OPO Solution – Expand into the Red



Highest Flexibility for Multicolor Multiphoton Applications

Leica TCS SP5 MP and Leica TCS MP with Coherent Chameleon Compact OPO (Optical Parametric Oscillator) offer gap-free tuning of IR excitation from 680 to 1300 nm. Now, red and far-red fluorescent markers are available for multiphoton microscopy at high resolution, contrast and speed.

- Reach deeper into samples due to reduced light scattering
- Improve sample viability by using longer wavelengths
- Explore the full range of fluorescent proteins and dyes by multiphoton imaging
- Simultaneously excite with two IR wavelengths

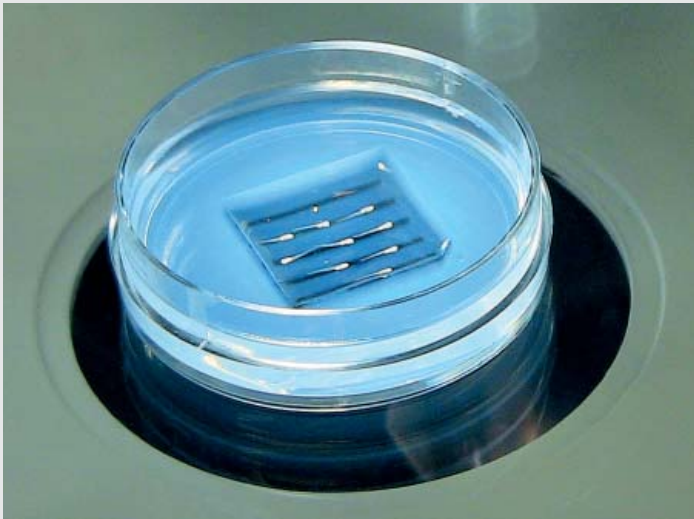


Fast and Intuitive Setup of the OPO

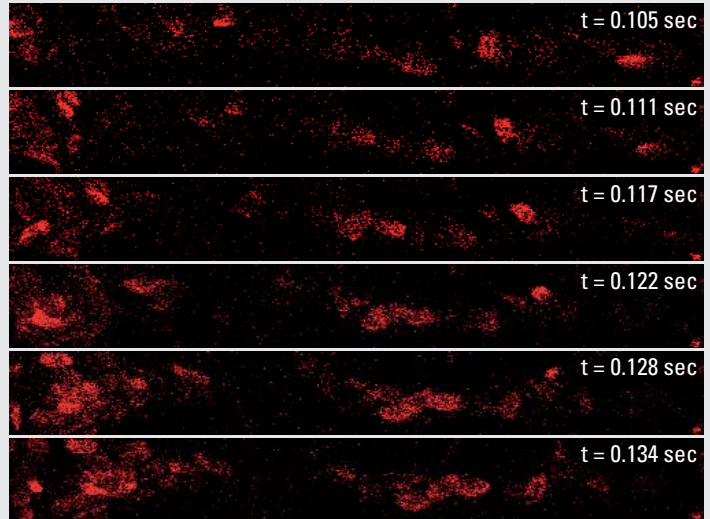
With its clear and intuitive user interface the Leica Application Suite Advanced Fluorescence (LAS AF) software greatly simplifies all operations. Control of the Coherent Chameleon Compact OPO is fully integrated in LAS AF.

- Convenient selection of OPO and standard MP excitation wavelengths
- Simultaneous or sequential excitation with the OPO and MP laser
- Easy operation of the microscope through guided experiments

Application: Visualization of Embryonic Blood Flow



Zebrafish (*Danio rerio*) embryos anesthetized and mounted on agarose for live imaging.



Blood cells labeled with DsRed. 167 frames/second at 512 x 64 pixels with Resonant Scanner. Multiphoton excitation at 1100 nm with OPO. Courtesy of Julien Vermot, IGBMC Imaging Center, Strasbourg, France

Zebrafish is a widely used model organism for developmental biology. While zebrafish embryos are highly transparent the structures that generate biological flows are localized in deep, light scattering tissues. Here, multiphoton microscopy with red-shifted fluorophores becomes the imaging method of choice as it allows deep tissue imaging with limited phototoxicity.

Leica OPO Solution and Leica Resonant Scanner – deeper tissue penetration at video rate