OLYMPUS®

Your Vision, Our Future

Silicone Immersion Objective

UPLSAPO60×S
UPLSAPO30×S

UIS2
World-leading optics

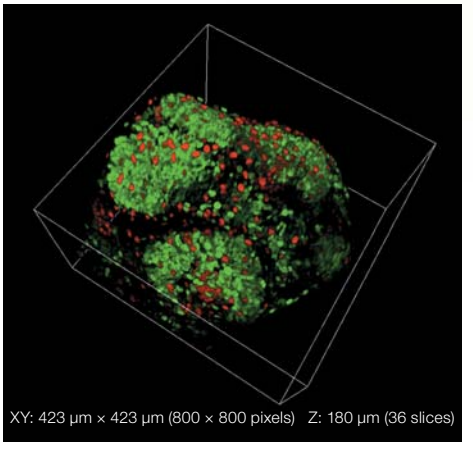
NEW

Silicone

The World's First

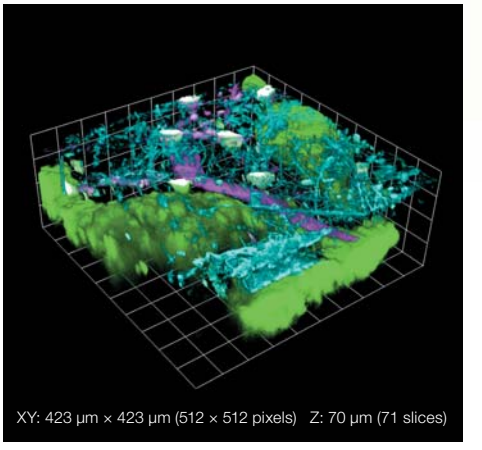
Silicone Immersion Objectives for Live Imaging

UPLSAPO30×S Confocal Image



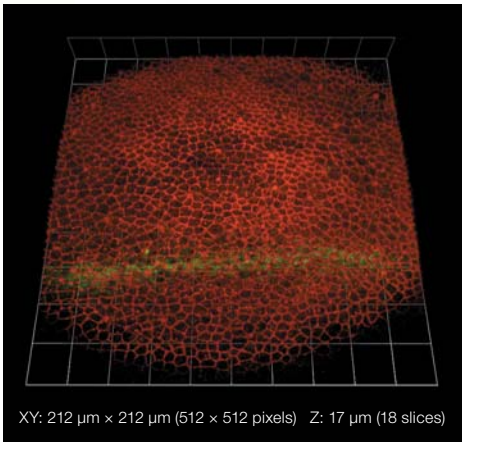
Fluorescence image of a transgenic zebrafish embryo at 26 hpf expressing zFucci (zebrafish Fluorescent Ubiquitination-based Cell Cycle Indicator).
(Green nuclei show the cell in G1 phase and red nuclei show the cell in S/G2/M phases.)
Courtesy of: Dr. Mayu Sugiyama, Dr. Atsushi Miyawaki
Laboratory for Cell Function Dynamics, Advanced Technology Development Core, RIKEN Brain Science Institute

UPLSAPO30×S Multiphoton Image



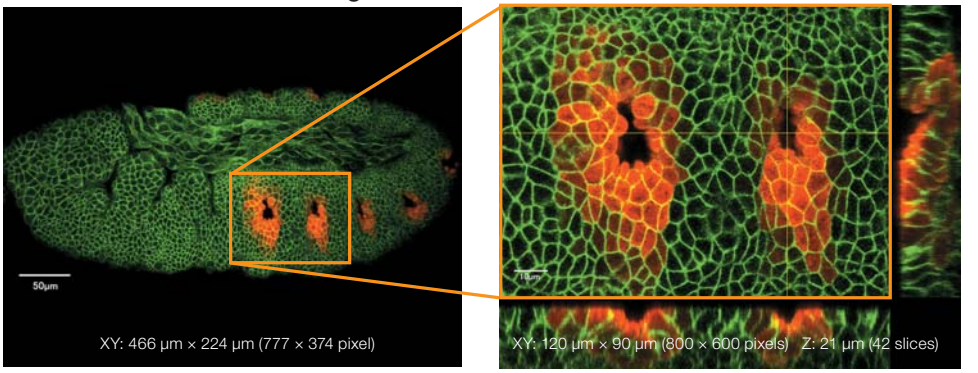
3D reconstruction of transplanted EGFP-expressing tumor cells (Green) with their surrounding blood vessels (Magenta; Texas Red-dextran injection) and collagen fibers (Cyan; Second harmonic generation) in a nude mouse.
Courtesy of: Dr. Yuji Kamioka, Dr. Michiyuki Matsuda
Department of Pathology and Biology of Diseases,
Graduate School of Medicine, Kyoto University

UPLSAPO60×S Confocal Image



Drosophila pupal notum.
Green: Myosin Regulatory light chain
Red: Junction Marker (Dαcatenin)
Courtesy of: Dr. Kaoru Sugimura, Dr. Atsushi Miyawaki
Laboratory for Cell Function Dynamics, Advanced Technology Development Core, RIKEN Brain Science Institute

UPLSAPO30×S Confocal Images



Zoom 1×

Zoom 4×

Confocal image of a Drosophila embryo at stage 11 expressing the tracheal marker trh-LacZ (Cy3, red) and the cell membrane marker Dlg (Alexa488, green).
Enlarged view shows invaginating tracheal placode.
Courtesy of Dr. Takefumi Kondo, Dr. Shigeo Hayashi
Laboratory for Morphogenetic Signaling,
RIKEN Center for Developmental Biology

The world's first silicone immersion objectives for live imaging

Minimizing spherical aberration and achieving higher resolution with deeper tissue

Silicone oil: The superior choice for observing live samples

The refractive index of silicone oil (ne≈1.40) matches very well to almost of live biological samples (ne≈1.38). Using silicone oil as an immersion medium can minimize spherical aberration caused by refractive index mismatch and realize brighter images and higher resolution with live samples.

High-resolution silicone immersion objectives

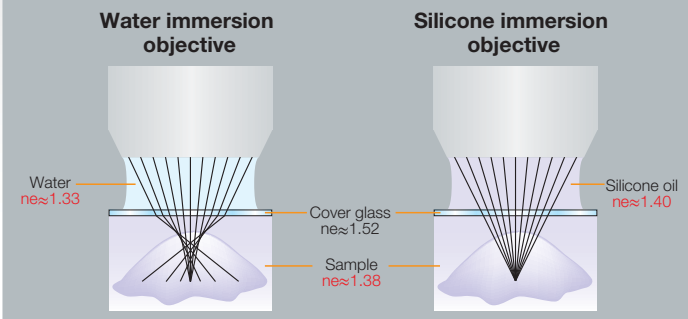
Silicone immersion objectives can be designed with a larger numerical aperture (NA) than water immersion objectives, resulting in brighter, high-resolution observation.

Silicone oil is ideal for long-term, time-lapse observation

The properties of silicone oil make it an excellent choice for long-term, stable time-lapse observation. It remains unchanged in 37 ºC environments suited to the observation of live samples. Because drying and hardening are not a problem (unlike water or glycerol immersion objectives), the refractive index of silicone oil remains constant and there is no need to add more fluid over time.

Refractive index is important in the observation of deep tissue

In deep tissue observation, image quality depends on keeping the refractive index of the sample and immersion medium as close to each other as possible.



When working with a water immersion objective, the difference between the refractive index of the sample and water results in spherical aberration in deep tissue, causing resolution to deteriorate and fluorescence to become dim.

When working with a silicone immersion objective, the difference between the refractive index of the samples and silicone oil is minimal. So it achieves brighter fluorescence images with higher resolution for deep tissue.

Broader view, greater depth

UPLSAPO30×S

This low-magnification, high-NA objective delivers high-resolution imaging over a broad sample area. It enables continuous observation from low to high magnification when used with the zoom function of laser scanning microscopes. It also offers a long working distance, which confers an advantage in the observation of deep tissue when using multiphoton excitation.

3D with superior resolution

UPLSAPO60×S

This high-magnification, high-NA objective enables highly detailed imaging of live samples using fluorescence, confocal laser scanning, and multiphoton observation. Offering superior spherical aberration correction and a longer working distance than a comparable 60x water immersion lens, it is ideally suited for high resolution 3D imaging.

Silicone Immersion Oil SIL300CS-30CC

- Refractive index: ne = 1.406, 23 ºC
- Low autofluorescence
- Net: 30 ml

Major specifications

	UPLSAPO30xS	UPLSAPO60xS
Magnification	30x	60x
Numerical Aperture (NA)	1.05	1.30
Working Distance (W.D.)	0.8 mm	0.3 mm
Cover glass thickness	0.13–0.19 mm	0.15–0.19 mm
Operation temperature	23 ºC–37 ºC	
Observation methods	Brightfield, Differential Interference Contrast, Fluorescence, Confocal Laser Scanning Microscopy, Multiphoton Laser Scanning Microscopy	

ECO-PRODUCTS

UPLSAPO30xS/UPLSAPO30xS are the environmental conscious products according to OLYMPUS' own standards.

Main features of OLYMPUS Eco-products are as follows.

- Lead-free and arsenic-free Eco-glass for optics, such as lenses and prisms.
- Exclusion of hexavalent chrome, mercury, lead and cadmium from metal materials and surface treatment of metal.

Please visit our web site for further information: http://www.olympus.co.jp/en/eco-products/

- **OLYMPUS CORPORATION is ISO14001 certified.**
- **OLYMPUS CORPORATION is FM553994/ISO9001 certified.**
- Specifications and appearances are subject to change without any notice or obligation on the part of the manufacturer.

OLYMPUS®

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