The CIBIO Advanced Imaging Core Facility (AICF) provides access to a wide collection of frontline light microscopes allowing the users to spam from basic observations with transmitted light to the more advanced fluorescence live imaging techniques. The Facility staff offer specialized technical and scientific support throughout every step of imaging experiments, ranging from the experimental design and image acquisitions to image processing and data analysis.

**SERVICES AND ANALYSIS**

Available applications and services are:

- **Transmitted light microscopy** (Bright-Field, Phase Contrast, Differential Interference Contrast and Dark-Field).
- **Fluorescence wide-field microscopy**
- **Confocal microscopy** (both laser scanning confocal and spinning disk systems).
- **Time-lapse and in vivo fluorescence imaging** (wide-field and confocal) within incubation systems that permit to control the environmental conditions over long period of time.
- **Wide-field optical sectioning with structured illumination** (Zeiss Apotome 2 module and Till Photonics SI module).
- **Video Confocal Super Resolution (VCS)**.
- **Fast and low phototoxic imaging of live processes** (both in wide-field and confocal mode) with LEDs and sCMOS cameras.
- **FRAP, FRET and TIRF techniques**.
- **Large area imaging** (mosaics, tiles or panorama modules) on big samples (such as mouse brain sections or histological preparations).

- **Multi-modal preclinical in vivo imaging**: fluorescence, bioluminescence, X-ray and radio isotopic modalities (on whole small animals as zebrafish and mice).
- **Laser capture micro-dissection** of tissues at single-cell level (both on fixed samples and living cells in cultures).
- **Histological sample preparations for light microscopy** (cutting instruments for tissue sectioning and dedicated fluorescence stereo microscopes).
- **Image processing and data analysis**. ImageJ/Fiji, SVI Huygens Core and Essential (for deconvolution analysis and distilling PSF), MatLab, Leica LasAF/LasX, Zeiss ZEN and Nikon NIS Elements.
INSTRUMENTATION

Inverted wide-field fluorescence microscopes:
• Zeiss Axio Observer Z1, equipped with Colibri 1, ApoTome 2 and incubation system.
• Till Photonics iMIC, equipped with structured illumination, FRAP, FRET and TIRF packages and incubation system.
• Leica DMi8, equipped with white LED and sCMOS camera.

Up-right wide-field fluorescence microscopes:
• Zeiss Axio Imager M2.
• Nikon Eclipse 90i.

Confocal systems:
• Leica TCS SP5 laser scanning confocal system, installed on a fully-motorized up-right fluorescence microscope.
• CREST Optics X-Light V2 Spinning Disk + Video Confocal Superresolution, installed on a Nikon Eclipse Ti2 inverted fluorescence microscope with incubation system.

In vivo imaging:
• Bruker Xtreme I.

Laser Micro-dissector:
• Leica LMD6500, on a Leica DM6000 B up-right fluorescence microscope.

Fluorescence stereomicroscopes:
• Leica MZ 10F e MZ 16F.

Cutting machines:
• Leica CM1850 UV Cryostat.
• Leica VT1200 Vibratome.
• Leica RM2245 Microtome.

WHY CHOOSE US

We offer our service and expertise to both academic and industrial partners. The experimental design and the acquisitions can be discussed and optimized with the Facility staff. We also provide trainings about major techniques related to optical microscopy.

CIBIO – Centre for Integrative Biology

The Centre for Integrative Biology (CIBIO) is a cutting-edge academic biomedical research institute within the University of Trento in Italy. CIBIO is currently at the top of the Italian State University ranking for quality of research in Biological Sciences (ANVUR 2011-2014). The Centre brings together more than 35 talented faculty members who are committed to the understanding of fundamental biological processes through a variety of integrated multidisciplinary basic and translational approaches in four major research programs: Cancer Biology and Genomics; Cell and Molecular Biology; Microbiology and Synthetic Biology; Neurobiology and Development.

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