

Molecular Imaging Center: Confocal Microscopy, Whole Animal Imaging and Image Analyses (Ramot)
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SCMIC offers a wide variety of Imaging services, covering confocal and high-throughput microscopy, whole animal imaging and image analysis.

All devices and instruments are centralized under one roof, providing a continuum of complete in-depth studies and projects in vivo and in vitro, from the micro to the macro level. Whole animal imaging includes Fluorescence and Bioluminescence Imaging, Fiber Confocal Microscopy, High sensitivity and High resolution Ultra-sound systems and in-vivo micro-CT scanner.

Image analysis services include: Deconvolution and 3D and 4D Real-Time Interactive Image Visualization.

Imaging Services

A. Microscope Imaging

- Confocal microscopy
Three confocal microscope systems capable of imaging both fixed and live cells on slides or glass-bottom petri dishes, fluorescence and transmitted light DIC / Phase imaging:
 - a. Zeiss 510 Meta – NLO b. Zeiss 410 c. Leica SP5
- Two – photon confocal microscopy
The two photon system is coupled to the Zeiss 510 Meta – NLO microscope.
- High resolution confocal microscope
State of the art super resolution imaging system - Leica TCS STED microscope. This is the first commercially available light microscope that enables visualization of structural details below the 100 nm resolution range - two to three times higher than that of a conventional confocal microscope.

B. Whole animal Imaging

- Fluorescence Imaging – CRI Maestro
Maestro enables multiplexed spectral in vivo imaging of small animals. Emissions of different fluorophors are separated, and auto fluorescence is removed.
- Bioluminescence Imaging - Photon Imager, Biospace
Bioluminescent and fluorescent high sensitivity imaging of small animals - in vivo and in vitro, in real-time.
- Fiber Confocal Microscopy - Cellvizio
A probe-based Confocal Laser Endomicroscopy system for small animal. Enables minimally-invasive, real-time dynamic observation of tissues at the microscopic level.
- Ultra-Sound
 - a. High sensitivity Ultra sound system adjusted for contrast media
ACUSON Sequoia C512 (Siemens)
Clinical diagnostic system designed to provide comprehensive and consistent imaging for different and unique acoustic properties.

b. High resolution Ultra-sound system

Vevo 2100 - (Visual Sonic)

High-frequency, high-resolution (spatial resolution down to 30 microns) digital imaging platform with linear array technology and Color Doppler.

c. in-vivo micro-CT scanner

The TomoScape Synergy is a stand-alone in-vivo micro-CT scanner with short scan times, excellent low-contrast resolution and high spatial resolution dedicated to small animal imaging. The spatial resolution of the system is in the order of 80 μm with a fixed geometry. The field of measurement has a diameter of up to 65 mm and maximum scan length of 15 cm, with shortest scan times down to 1 s

C. Image analysis services

- Deconvolution - Using the Huygens software
Huygens Software intended for restoration, interactive analysis and volume visualization of 2D, 3D, multi-channel and time series images from fluorescence microscopes.
- 3D and 4D Real-Time interactive image visualization - Using the Imaris software
Imaris is a core software module for visualization, segmentation and interpretation of 3D and 4D microscopy datasets.
- Consultation on Imaging data analysis

For more information, please visit our Website: <http://imaging.tau.ac.il>

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