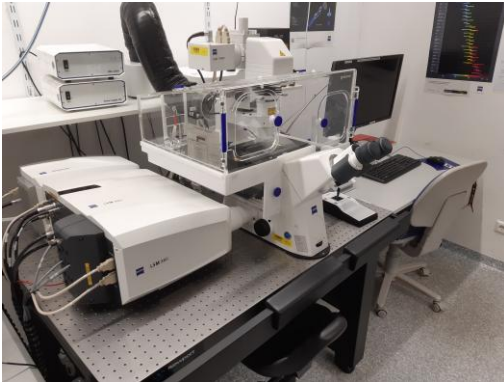


Microscopes descriptions **

Confocal Zeiss LSM 880



The Laser Scanning microscope Zeiss LSM 880 with Airyscan is an inverted confocal Microscope well suited for most kinds of fluorescence imaging. Equipped with a clear incubation chamber the Axio Observer.Z1 stand fitted with a motorised stage and focus, allowing for multi position 4D experiments. The system is fitted with the following components:

Objectives:

- EC Plan-Neofluar 10x/0.3, FWD: 5.2 mm
- Plan-Apochromat 20x/0.8, FWD: 0.55 mm
- LD LCI Plan-Apochromat 25x/0.8, Glycerol/Water/Oil Imm Corr DIC, FWD: 0.57 mm
- Plan-Apochromat 40x/1.3 Oil DIC, FWD: 0.21 mm
- Plan-Apochromat 63x/1.4 Oil DIC, FWD: 0.19 mm

Fluorescence Filters:

- Cy3, d=25 shift free EX BP 545/25, BS FT 570, EM BP 605/70
- GFP shift free EX BP 470/40, BS FT 495, EM BP 525/50
- DAPI shift free EX G 365, BS FT 395, EM BP 445/50

Lasers:

- Argon Laser (458 nm, 488 nm and 514 nm)
- UV Diode laser (405 nm)
- Diode pumped solid state Laser (561 nm)
- Helium-Neon Laser (633 nm).

Detection:

- 3 detector array (2 flanking Multialkali PMTs and 1 centre GaAsP PMT) with variable detection range.
- 1 PMT for transmitted light (T-PMT).
- **Airyscan Detector** is available. Drastically improving the signal to noise ratio by utilizing light that would otherwise be rejected by the confocal pinhole. The increased signal-to-noise ratio can be used to retrieve high-resolution information. **Airyscan consists of a detector array of 32 detector elements** arranged in a compound eye. **Airyscan fast mode** increases the acquisition speed by a factor of four.

Acquisition Software:

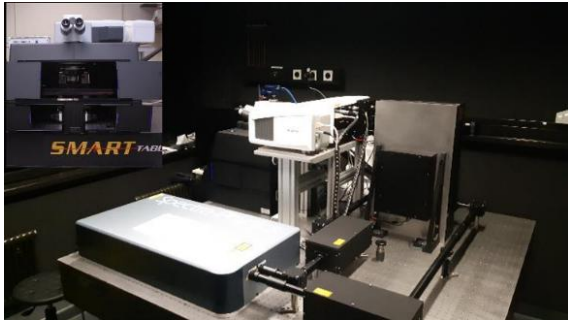
- Zeiss ZEN 2.3 (black edition)

Auto focus strategies:

- Definite focus
- Fluorescent

- Reflection

Multiphoton and Confocal microscope LSM 980



The Laser Scanning microscope Zeiss LSM 980 with Airyscan 2 is an upright confocal microscope well suited for most kinds of fluorescence imaging, as well as two photon microscopy. Equipped with a dark incubation chamber the Axio Examiner.Z1 upright stand is fitted with a motorised stage and focus, allowing for multi position 4D experiments. The system is fitted with the following components:

Objective:

- 2.5x/0.085, air objective
- 10x/0.45 W (FWD=1.8mm), water immersion.
- 20x/1.0 DIC (FWD=1.8mm), water immersion.
- 40x/1.0 DIC (FWD=2.5mm), water immersion.

Widefield Fluorescence Excitation:

- Excitation (Colibri 7) / Emission (Filter set 90HE):
 - 385nm / 425-30 - DAPI, Alexa 405 Hoechst 33258 and similar dyes
 - 475nm / 514-30 - eGFP, FITC and similar dyes
 - 555nm / 592-25 - Cy3, TRITC, DsRed and similar dyes
 - 590nm / 592-25 - mCherry, Alexa 568, mPlum and similar dyes
 - 630nm / 709-100 - Cy5, Alexa 631 and similar dyes

Laser configuration:

- Single Photon Laser (Conventional Confocal/Airyscan):
 - 405nm diode laser
 - 488nm diode laser
 - 561nm diode pumped solid state
 - 639nm diode laser
- Two Photon lasers:
 - Insight X3 760-1300 nm tuning range (1000-1080 not useable)
 - 1040nm fixed wavelength laser

Detection:

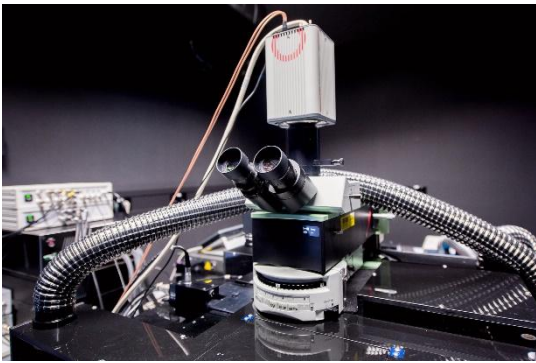
- Zeiss AxioCam 506 mono – 6MP Monochrome CCD sensor (2752x2208), 14 Bit.
- Spectral detection, consisting of a 32 channel GaAsP PMT array, plus 2 side Multialkali PMTs. With each of the 32 GaAsP PMTs detecting 8.8nm of light, even highly overlapping emission spectra can be unmixed in real time, allowing for concurrent imaging of several targets.
- Airyscan 2 – For Super Resolution (SR) microscopy, allowing users to image structures too fine to be resolved by conventional confocal microscopy. The Airy module can also be used in 4Y or 8Y scanning modes (Multiplex mode), dramatically increasing the rate of acquisition while retaining SR.
- 2x Non Descanned Detectors (NDD) + 2x BiG (binary GaAsP PMT module), for 2 photon microscopy.
 - Blue – Short Pass 485nm (NDD)

- Green – Band Pass 500-550nm (BiG)
- Red – Band Pass 570-610nm (BiG)
- "Dark Red" – Band Pass 640-710nm (NDD)

Acquisition Software:

- Zeiss ZEN 3.6 (blue edition)

Multiphoton LaVision BioTec TriM Scope II



The LaVision TriM Scope II is an upright multiphoton Microscope equipped with:

Fluorescence microscope:

- The microscope has a HBO fluorescence light sources and four fluorescent filter cubes
- CCD camera
- A motorized sample stage is also available for automated tile scans
- Live drift correction software (VivoFlow)

Laser:

- Ti:Sa laser Chameleon Ultra II (Coherent) tunable in the range of 800 to 1080 nm
- OPO (Optical parametric oscillator) compact to support the range of 1000 to 1600 nm

Objectives:

- Olympus XLFluor 4X/340, working distance: 28.8 - 30.0 mm
- Nikon LWD 16x/0.80W, working distance: 3 mm
- Olympus XLUMPlanFI 20x/0.95W, working distance: 2 mm
- Nikon NIR Apo 40x/0.80W, working distance: 3.5 mm

Detection:

- The system is equipped with four high sensitive GaAsP (Gallium arsenide phosphide) detectors for single beam scanning and a Hamamatsu EM Orca Flash 2.8 CCD camera.

Acquisition Software:

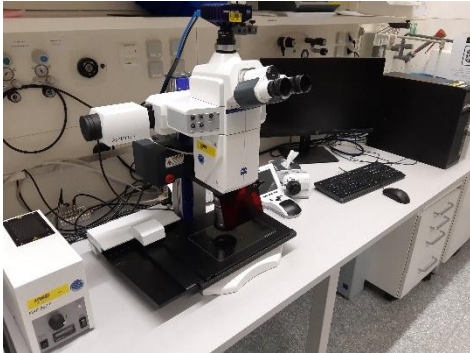
- LaVision ImSpector

Infrastructure:

- The multiphoton microscope is located in an air-conditioned darkroom where S1 and S2 experiments can be performed

- The preparatory room features an anaesthesia device, a dissecting microscope, a laminar airflow cabinet, blood count device, and basic equipment for preparation of antibodies and chemicals.
- A mouse cabinet is available for hosting the experimental animals.

Axio Zoom.V16



The Carl Zeiss Axio Zoom.V16 is a widefield epifluorescent microscope with a large working distance objective perfect for larger samples that are difficult to mount in traditional widefield microscopes. With LED transmitted illumination cell structure can be imaged. Fitted with a motorised stage and focus the system can be used for the acquisition of 4D data sets. The microscope is fitted with the following components:

Objective:

- Apo Z 1.5x/0.37 FWD 30mm, optical zoom range: 16.8x - 269x

Fluorescence Filters:

- 49 Dapi (Ex: G 365, Em: 445/50)
- 38 FITC (Ex: 470/40, Em: 525/50)
- 63 mRFP (Ex: 572/25, Em: 629/62)

Camera:

- Zeiss AxioCam 506 mono – 6MP Monochrome CCD sensor (2752x2208), 14 Bit

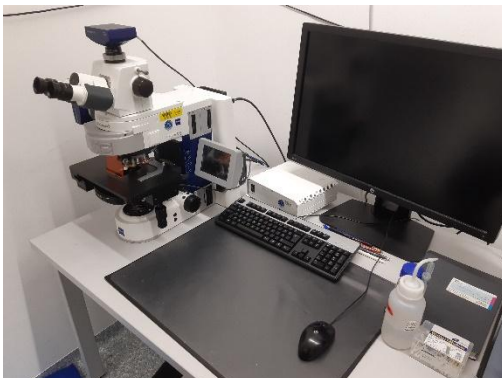
Apotome:

- Optical sectioning with ZEISS Apotome 3 allows you to efficiently minimize out-of-focus light. Creating crisp images and 3D renderings, even of thicker specimen.

Acquisition Software:

- Zeiss ZEN 2.6 (blue edition)

Zeiss Axio Imager M2 Epifluorescence



The Carl Zeiss Axio Imager M2 epifluorescent microscope is a traditional wide field microscope, suitable for most epifluorescent applications. Fitted with a motorised stage and focus it is suitable for capturing large area 3D images. The microscope is fitted with the following components:

Objectives:

- EC Plan-Neofluar 5x/0.16 DIC0 Air (FWD=18.5mm)

- EC Plan-Neofluar 10x/0.30 DIC I Air (FWD=5.2mm)
- Plan-Apochromat 20x/0.80 DIC II Air (FWD= 0.55mm)
- EC Plan-Neofluar 40x/0.75 DIC II Air (FWD=0.71mm)
- Plan-Apochromat 63x/1.40 DIC III Oil (FWD=0.19mm)

Fluorescence Filters:

- 49 Dapi (Ex: G 365, Em: 445/50)
- 38 HE GFP (Ex: 470/40, Em: 525/50)
- 43 HE dsRed (Ex: 550/25, Em: 605/70)
- 64 HE mPlum (Ex: 587/25, Em: 647/70)
- 50 Cy5 (Ex: 640/30, Em: 690/50)

Camera:

- AxioCam MRm – 1.4MP Monochrome CCD-Sensor (1388x1040), 12 Bit

Acquisition Software:

- Carl Zeiss Axiovision 4.9.1

Leica DM6 B Epifluorescence



The Leica DM6 epifluorescent microscope is a traditional wide field microscope, suitable for most epifluorescent applications, as well as brightfield and polarised imaging. Fitted with a motorised stage and focus it is suitable for capturing large area 3D images. The microscope is fitted with the following components:

Objectives:

- HC PL FLUOTAR 5x/0.15 Dry
- HC PL FLUOTAR 10x/0.30 Dry
- HC PL APO 20x/0.70 Dry
- HC PL APO 40x/0.85 Dry
- HC PL APO 63x/1.40 OIL

Fluorescence Filters:

- Transmitted/DIC/Polarised
- Dap (Ex: 350/50, Em: 460/50) - Dapi, Hoechst
- L5 (Ex: 480/40, Em: 527/30) - AF488, eGFP, Fitc
- Y3 (Ex: 545/25, Em: 605/70) - AF546, AF555, Cy3, PE, tdTomato
- Y5 (Ex: 620/60, Em: 700/75) - AF647, APC, Cy5

Cameras:

- Leica DFC365 FX – 1.4MP Monochrome CCD-Sensor (1392x1040) 12 Bit
- Leica DMC4500 – 5MP Colour CCD sensor (2560x1920), 14 Bit

Acquisition Software:

- LAS X 3.7.2