



Microscopy and Imaging Core Facility (under construction)

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List of Instruments

Confocal Microscopes:

Leica SP2 with upright stand Leica DMRE7. Laserlines 458, 476, 488, 514, 543, 633 nm, three photomultiplier-detectors and one transmitted light detector. Equipped with water-dipping objectives (10x, 20x, 40x), multi-immersion-objective (25x) and oil-immersion objectives (40x and 63x). The system was supplemented by a Lambert Instrument FLIM-module: Frequency domain FLIM with two LED-sources for green and red fluorescent dyes.

UHG-W1-202; contact Thorsten Seidel

Zeiss LSM5 with inverted stand AxioObserver Z1. Laserlines 458, 488, 514, 543, 633 nm and two photomultiplier detectors. Equipped with air-objectives (10x, 20x, 40x), one water-immersion objective (40x) and one oil-immersion objective (63x). Classical filter-dependent confocal-system which is in particular suitable for FRET-measurements between cyan and yellow fluorescent proteins.

UHG-W01-236; contact Thorsten Seidel

Zeiss LSM780 with inverted stand AxioObserver. Laserlines 405, 458, 488, 514, 561, 594, 633 nm and 34-channel spectral detector (1 GaAsp for blue light, one 32-ch spectral array detector, one PMT for red light) and transmitted light detector. Equipped with air objective (10x), multi-immersion objective (20x), oil-immersion objective (40x, 63x) and water-immersion objective (63x). Module for fluorescence correlation spectroscopy, on stage incubation (temperature, humidity, CO₂-concentration).

UHG-W01-236; contact Thorsten Seidel

Zeiss LSM900 with inverted stand Axio Observer 7. Laserlines 405, 488, 561, 640 nm for "classical" immunostainings. Two GaAsp-detectors and one AiryScan-detector, the later allowing for super resolution up to 120 nm lateral. The microscope is equipped with two air-objectives (5x/NA0.16, 20x/NA0.8), one water-, silicon-, glycerin immersion objective (40x/NA1.2) and one oil-immersion objective (63x/NA1.4). Incubation housing (temperature, humidity, CO₂-concentration). Colibri 5 - LED

light source plus filters to observe DAPI, GFP/488 and Cy3/555 as well as brightfield to evaluate the probe through the eye pieces.

Coming soon: AxioCam 305 mono (CMOS digital camera) and AI sample finder.

R1-B3.08; contact Barbara Biermann

Fluorescence Microscopes

Keyence BZ-X810 with inverted stand. Fully automated fluorescence microscope, mounted on a trolley. Filter sets for DAPI, GFP, RFP. Sample holder for slides, petri dishes, cell culture flasks and 96-well plates. The microscope is equipped with air-objectives and oil-immersion objectives. Software with de-convolution module.

UHG-W01-230; contact Thorsten Seidel

Light-sheet Microscope

Luxendo MuVi SPIM for cleared and living samples. Laserlines 405, 440, 488, 514, 561 nm and two CMOS cameras. Different Octagons for cleared and live samples, incubation for live samples.

UHG-W0-220; contact Thorsten Seidel

Polarization Microscope

Octax PolScope with inverted stand Nikon Eclipse TE2000-S. Heating device (37°C), specific objective, camera and software (Octax Eyeware). Designed for oocyte-diagnostic.

UHG-W01-230; contact Thorsten Seidel

Micro-Manipulation Setup

Zeiss Axiovert40CFL & Eppendorf Femtojet. Inverted stand with filter sets for CFP, YFP, CFP-YFP-FRET (others are available). CMOS-camera (Zeiss MRm) and Zeiss Axiovision Software.

UHG-W01-250; contact Thorsten Seidel

Slide scanner:

Zeiss AxioScan 7. Widefield microscope / slide scanner with Colibri7-LED light source (385 nm, 430 nm, 475 nm, 555 nm, 590 nm, 630 nm, 735 nm) for brightfield and fluorescent recordings (filter "43 HE Cy3 shift free" for e.g. Cy3 with EX BP 550/25, BS FT 570, EM BP 605/70 and filter "112 HE LED" allowing bypass of e.g. DAPI, FITC, DsRed, Cy5 and Cy7 with beam splitter PFT 405 + 493 + 575 + 654 + 761 and emission filters PBP 425/30 + 514/31 + 592/25 + 681/45 + 785/38). Four air objectives (5x/0.25, 10x/0.45, 20x/0.8, 40x/0.95) and a CMOS-camera "AxioCam 705 color" for automatic scanning of up to 100 slides.

R1-D2.109; contact Barbara Biermann

FACS

Sony Cell Sorter SH800 allowing for fluorescence-activated cell sorting using laser 405 nm, 488 nm or 638 nm, single-cell analysis, contamination-free by one-way microfluidic chips. Biosafety level S1.

Under construction: biosafety cabinet S2

R1-B1.02; contact Barbara Biermann

Cytometer (Biology)

Beckman Coulter Gallios with Laser lines 405, 488, 638 nm and ten filters (525 BP/40, 550DC SP, 655 DC SP, 620 BP 30, 755 LP, 710 DC SP, 660 BP 20, 595 DC SP, 450 BP 40, 575 BP 30, 730 DC SP, 695 BP 30/675 BP 20, 725 BP20, 750 DC SP, 550 BP 40).

UHG-W0-218; contact Thorsten Seidel for further information

Electron Microscopy

Transmission Electron Microscope (TEM) Zeiss EM109 (UHG-W01-220) is under construction: training of technical staff for sample preparation and upgrade of the microscope with digital camera plus the relevant software

UHG-W0; contact Thorsten Seidel

Additional Equipment

Cellbox Flight 2.0 portable CO₂ incubator (5 %) with heating (28-37°C) for traveling with your living samples for up to 32 hours (train, car, plane) by dry ice sublimation.

R1-D2.109; contact Barbara Biermann