Cellular Imaging Core Facility - CELLIM

Laser scanning confocal microscope Zeiss LSM 880 with AiryscanFast module

Location:
CELLIM, building A2, room 1.15

Booking alias:
LSM880_Airy-A2

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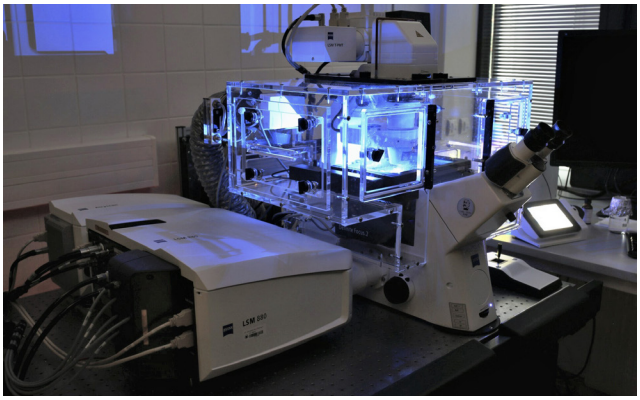


More information:

SCAN ME

Reservations:

https://booking.ceitec.cz/PlanningBoard.html

Overview:

Inverted microscope Zeiss Axio Observer.7 with laser scanning unit LSM 880 and incubation chamber for live imaging with controlled CO_2 and temperature. Microscope is equipped with four solid state lasers (405, 561, 594 and 633 nm), argon laser (458, 488 and 514 nm), two multialkali PMT detectors, 32 channel spectral GaAsP detector, Airyscan detector and T-PMT for transmitted light detection. The Airyscan detector allows acquisition with increased resolution and signal to noise ratio compared to normal confocal scanning. In fast mode the detector is capable of 4x faster acquisition compare to standard mode. For fast and precise Z-movement there is piezo Z stage insert - available on demand.

Specifications:

Objectives
Plan-Apochromat 10x / 0.45 AIR
Plan-Apochromat 25x / 0.80 MIM
C-Apochromat 40x / 1.20 W
C-Apochromat 63x / 1.20 W
Plan-Apochromat 63x / 1.40 OIL
Plan-Apochromat 100x / 1.46 OIL

Transmitted light techniques
Brightfield
Differential interference contrast

Fluorescence light source
HXP 120V

Filters
DAPI (F-set 49), CFP (F-set 47), GFP (F-set 38), Cy3 (F-set 63), Cy5 (F-set 50)

Lasers
405 nm, 458 nm, 488 nm, 514 nm, 561 nm, 594 nm, 633 nm

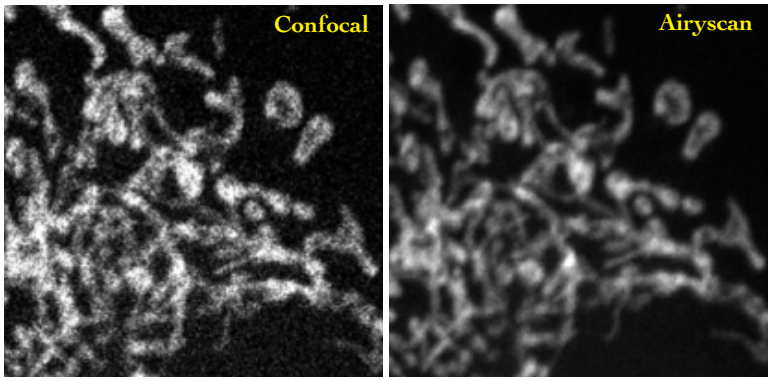
Filters for Airyscan
BP420-480 + LP 605,
BP465-505 + LP 525,
BP495-550 + LP 570,
BP555-620 + LP 645,
BP420-480 + BP 495-550,
BP420-445 + BP 465-505

Software
Zen Black

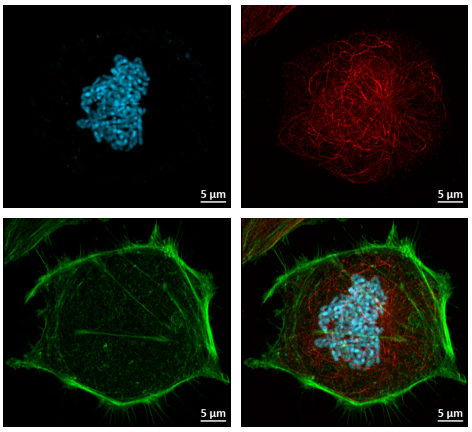
Manual:

SCAN ME

Examples:



Mitochondria membrane in mammalian cells.
Comparison between confocal and Airyscan image.



Actin filaments and microtubules in mammalian cells.
Blue Hoechst: DNA, Red Alexa Fluor 568: microtubules, Green Phalloidin Alexa 488: actin filaments.
Objective: Plan-Apochromat 100x/1.46 Oil.
Final image was obtained using ZEN deconvolution.