

Prairie Ultima 2/Multi-Photon Confocal System

Prairie (Now is Bruker) Ultima 2 Multi-Photon microscope with a tunable pulse laser (680-1080 nm) is located at HSC RM 48D. The system is on a manual Olympus upright microscope. Brightfield and EPI fluorescence lamp are equipped for rapid sample identification and focusing.

Features:

- Six detectors, four reflected mode Photo Multipliers Tube (PMT) detectors and two transmitted mode PMTs for second harmonic and fluorescence detection.
- High NA water immersion optics including 16x PLANAPO LWD Nikon NA 0.8 and a PLANAPO Correction collar LWD 25x NA 1.1, 60x LUMFL water immersion Olympus NA0.8.
- Piezo Z drive (Optional) for fast z acquisition, 2 inch travel, XY motorized stage
- Fixed (Z) stage with adjustable (2 inch) travel
- Bioscience Tools stage top incubator with heated pad, heated dish
- Mouse Anesthesia system from VetEquip for in vivo applications (Halothane with scrubber)
- Gas supply, O₂, CO₂, O₂/CO₂ mix

Imaging laser:

Type	Wavelength (nm)	Power	Manufactory
Pulsed femtosecond tunable laser	680-1080	400-4000 mW depending on wavelength	Coherent Chameleon Vision II

Suggested Applications:

- Deep live cell imaging of zebrafish, mouse in vivo, organ culture and slices, 3D cell culture
- Non-linear optical microscopy imaging (fluorescence, SHG)
- Fast volumetric acquisition with piezo-controlled objective
- Multichannel (blue, green, red and far red) fluorescence detection in vivo and in vitro
- Software that enables tiling to visualize large samples, time-lapse experiments, etc.
- Second harmonic imaging of collagen or other ECM

Objectives:

Type	Magnification	N.A.	Immersion	Working Distance (mm)	Manufactory
PLAN Fluor	10X	0.3	Dry	16	Nikon
Fluor	40X	0.8	W	2	Nikon
LWD	16X	0.8	W	3	Nikon
PLANAPO LWD	25X	1.1	W	2	Nikon