

# Examine Tissue Morphologies

**ZEISS Microscopes for Histology  
and Histopathology**

**ZEISS**

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Seeing beyond

# ZEISS Microscopes for Histology and Histopathology

Pathology, histopathology or histology aims to study the manifestation of disease by microscopic examination of tissue morphology. In pathology, the sample to be examined under the microscope usually is the result of a surgery, biopsy or autopsy after fixation, clearing /embedding and sectioning of the tissue specimen. Alternatively, frozen section processing with a cryostat is done when rapid results are required (e.g. during surgery) or fixation would be detrimental to target structures such as lipids or certain antigens.



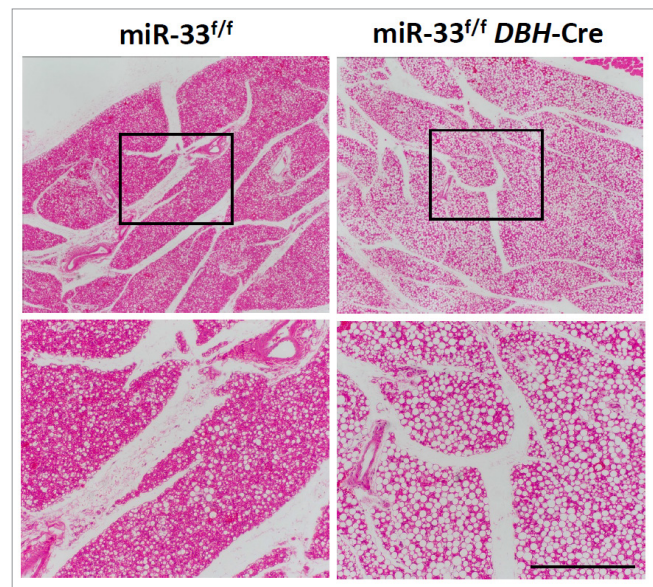
More detailed information on histology training as an important part of medical courses can be found in the whitepaper by ZEISS on "Microscopic Anatomy in the Study of Medicine: Fundamentals of Histology".

[Download Whitepaper](#)

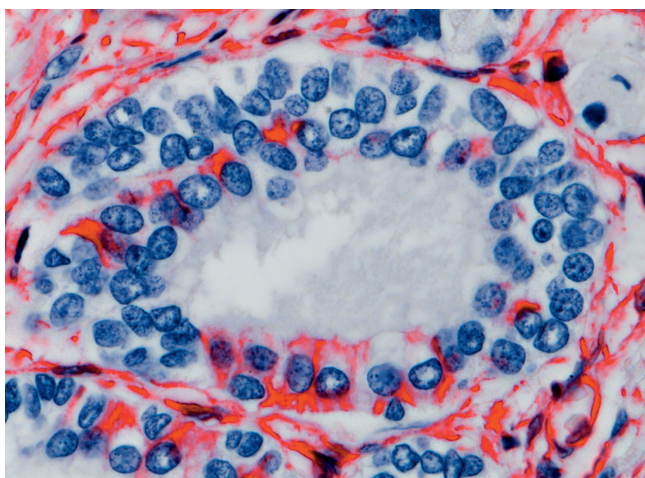
A good differentiation of tissue structures and clearly visible cellular details are absolute prerequisites in pathology for carcinoma and tumor cell diagnosis. Histopathologists rely on crystal-clear images of their samples with the highest color fidelity in brightfield. Other contrasting techniques include polarization, CISH, fluorescence, immunofluorescence, or FISH microscopy. While histological and immunohistochemical stains result in a good transparency of the sample and specific staining of cellular features, it is the optical quality of the microscope, the fidelity of the attached camera for digital documentation, and the ergonomic design of the instrument that can make all the difference when screening patient samples. Apart from manual microscopes, automated digital slide scanning systems with class-leading optics assist with high-throughput screening and archiving.

## Microscope Requirements for Histology and Histopathology – Your Checklist

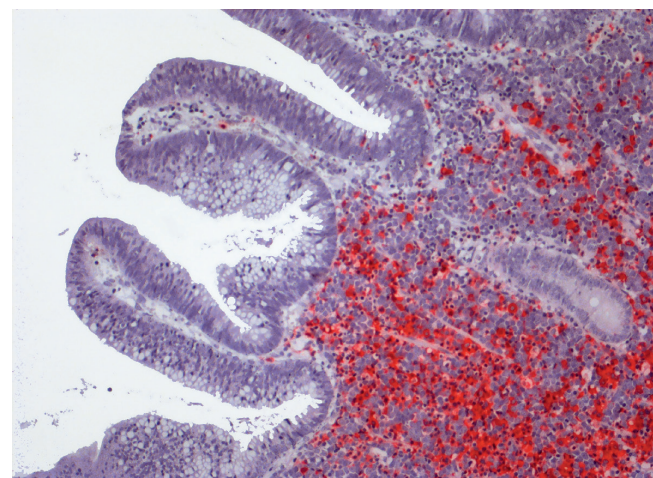
- Different contrasting techniques such as brightfield, polarization, fluorescence, immunofluorescence or FISH.
- Ergonomic design with all microscope controls easy to reach.
- Digital documentation with microscope camera.



Courtesy of: K. Ono and T. Horie, Kyoto University Hospital, Japan





Histological section – brightfield. Red: Anti-CD. Blue: nuclear counterstaining. Brightfield.



Histological section – Red: MPOX2. Blue: nuclear counterstaining. Courtesy of A. Schmitt-Gräff, Pathology, University of Freiburg, Germany

# Recommended Microscopes

	ZEISS Primostar 3	ZEISS Axiolab 5	ZEISS Axioscope 5
Microscope			
Key users	Use this rugged and compact routine microscope to advance your teaching and training or your clinical laboratory routine.	Smart microscope for clinical laboratory – a single button for crisp images in true color, already with the correct scaling information.	Smart clinical and laboratory microscope – above and beyond, option to acquire fluorescent images consisting of up to four different channels.
Suggested	<b>Fixed Koehler package</b> ■ 415501-0071-000 <b>Or Full Koehler package</b> ■ 415501-0091-000	■ 490980-0005-000	■ 490040-0046-000
Condenser	■ Abbe condenser 0.9/1.25	■ Condenser 0.9/1.25 H + Low-power system for objectives 2.5x/4x  Option for ■ Condenser, achromatic-aplanatic 0.9 H	■ Condenser, achromatic-aplanatic 0.9 H + Low-power system for objectives 2.5x/4x
Objective	■ iPlan-Achromat 4x/0.10, 10x/0.25, 40x/0.65  Option for ■ iPlan-Achromat 20x/0.45 ■ iPlan-Achromat 100x/0.8	■ Objective N-Achroplan 2.5x/0.07 ■ Objective N-Achroplan 5x/0.15 ■ Objective N-Achroplan 10x/0.25 ■ Objective N-Achroplan 40x/0.65  Option for ■ Objective N-Achroplan 20x/0.45	■ Objective N-Achroplan 2.5x/0.07 ■ Objective EC Plan-Neofluar 5x/0.16 ■ Objective EC Plan-Neofluar 10x/0.3 ■ Objective EC Plan-Neofluar 20x/0.5 ■ Objective EC Plan-Neofluar 40x/0.75
Camera	ZEISS AxioCam 212 color	ZEISS AxioCam 212 color/ZEISS AxioCam 305 color	

## To complete your microscope system we additionally recommend:

- **ZEISS Labscope Fast Panorama module:** With Fast Panorama you turn your manual microscope into a whole slide imaging system. By manually moving the stage of your microscope, images of the sample will be stitched together automatically into a panorama microscope image. It is your perfect choice if you have to scan whole slide image (WSI) occasionally.
- **Barcode scanner and foot pedal for routine usage:** Your smart microscope from ZEISS lets you assign microscope images with the correct scaling information to barcode-labelled samples. Just use an Axiolab 5 or Axioscope 5 microscope with Windows PC or iPad, connect a barcode reader to your AxioCam 212 color camera and start.
- **Twain driver plugin for ZEISS AxioCam 203 and 212 microscope cameras:** With TWAIN, the standardized interface you can control camera and image acquisition. TWAIN plugin opens a simple camera graphic user interface (GUI) within any TWAIN compatible app and allow you to snap images with ZEISS AxioCam 203 or 212 microscope cameras.
- **Multidiscussion microscope systems for consultation:** Imagine you have an interesting structure in your pathological sample, where you need a second opinion or advice. You simply add additional tubes and respective carriers to your microscope.

Cover image: Histological section – Red: CD61. Blue: nuclear counterstaining. Brightfield.



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