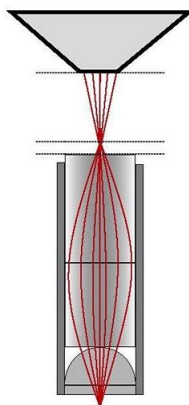


2P Microendoscope

High-NA Two-Photon GRIN Microendoscope



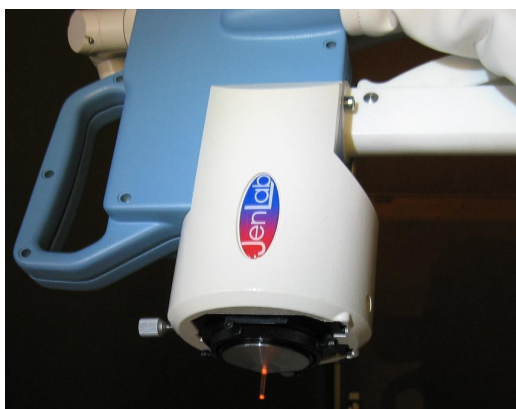
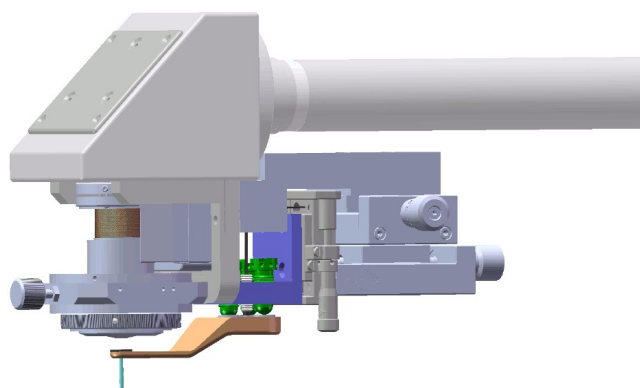
The two-photon microendoscope is a high numerical aperture gradient index lens system for:

- intratissue imaging of small animals
- clinical imaging of human skin
- tissue engineering
- cosmetic research, skin aging
- in situ drug monitoring
- stem cell research
- detection of fluorescent proteins

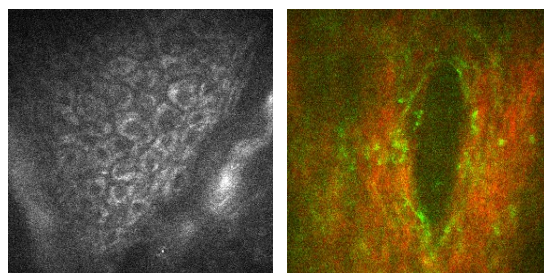
Product description

The 7 mm / 20 mm long rigid microendoscope with a diameter of 1.4 mm is based on gradient index (GRIN) lens technology. The endoscope can be easily attached to and removed from laser microscopes and multiphoton tomographs using a magnetic adapter.

The high numerical aperture of 0.8 is capable to provide high submicron resolution images. Autofluorescence, Second Harmonic Generation (SHG), and xenofluorescence can be detected.



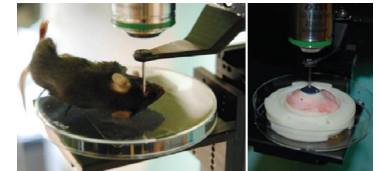
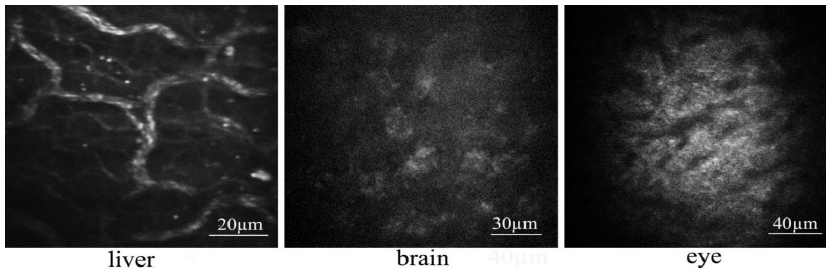
Microendoscope attached to the flexible tomograph MPTflex.



In vivo two-photon microendoscopy of human skin. Left: autofluorescent cells in the epidermis. Right: elastin (green) and collagen (red) in the upper dermis.

Applications

The microendoscope has been used for small animal research. In particular, optical sectioning of ocular tissue in pigs and mice as well as of intrabody tissues such as liver, intestine, and brain in mice have been performed. Furthermore, clinical studies have been conducted on patients suffering from chronic and acute wounds. The high-NA two photon microendoscope is clinically certified.



Microendoscopy of ocular tissue in mice and pigs

Three optical sections out of a stack of two-photon endoscopic autofluorescence images of mice are shown (liver, cerebellum, ocular collagen).

References

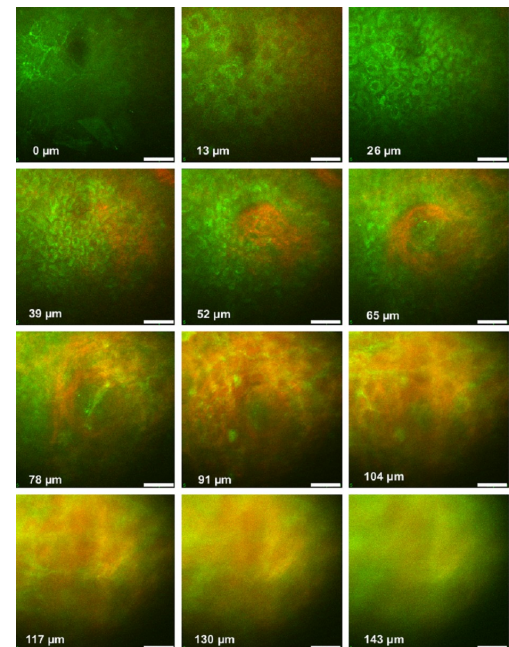
König, Ehlers, Riemann, Schenkl, Bückle, Kaatz: Clinical Two-Photon Microendoscopy. *Microscopy Research and Technique* 70 (2007) 398-402

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Technical data

Numerical aperture	0.8
Outer diameter [mm]	1.4
Length [mm]	7/20
WD [μm]	150
Horizontal resolution [μm]	0.87
FOV [μm^2]	130x130



In vivo endoscopic optical sectioning of human skin in different tissue depths. Elastin (green), collagen (red).

Note: These specifications are subject to change without notice.

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