

When size matters... The FIVE 1 offers the best of both worlds

The optional flexible image transfer bundle attachment fits onto the FIVE 1 endomicroscope probe to allow access to imaging sites that cannot be accessed using the standard FIVE 1 ultra high resolution endomicroscope probes.



Shown with RBK5315A endomicroscope & optional LCD monitor

From bench to bedside...

The same Optiscan technology used in the FIVE 1 is also used in clinical endomicroscopy instruments, and hence techniques developed in animal models or as part of diagnostic regimens can be directly transferred to clinical practice.

SYSTEM SPECIFICATIONS			
Power Requirements	Optical Unit Control Unit	100 ~ 240 VAC, 50 ~ 60 Hz, 50 ~ 70 VA 100 ~ 240 VAC, 50 ~ 60 Hz, 170 VA	
Illumination	Laser class	Class 3R Laser within FIVE 1 OPTICAL UNIT	
	Wavelength	488nm	
	Max intensity at tissue	1.0 mW	
Detection	Number channels	1	
	Dynamic range	12 bits	
	Bandwidth	User selectable: 505 nm ~ 750nm or 550nm ~ 750 nm	
Output file formats		*. BMP, *.TIFF (16 bit), *.JPG, *.OPZ	
Operating system & software		Windows XP, includes integrated control and image acquisition software	
Size (WxHxD) & Weight (not packaged)	FIVE 1 Control Unit	410 x 140 x 450 mm	10.8 kg
	FIVE 1 Optical Unit	430 x 180 x 470 mm	16.2 kg
	CRT Monitor* (with stand) *Optional	440 x 461 x 460 mm	22.0 kg
	LCD Monitor* (with stand) *Optional	468 x 403 x 315 mm	8.6 kg
	Keyboard (excluding cable)	415 x 35 x 193 mm	1.0 kg
	Footswitch	175 x 45 x 140 mm	1.1 kg
	Endomicroscope probe holder	170 x 132 x 80 mm	1.7 kg

ENDOMICROSCOPE		
	RBK6315A Endomicroscope	RBK6330A Endomicroscope
Probe shaft length	150 mm	300 mm
Weight: Excl. connector & umbilical	60 g	70 g
Probe shaft diameter	6.3 mm	
Probe distal tip diameter	5.0 mm	
Umbilical cable length	1500 mm	
Immersibility:	Endomicroscope probe	Yes
	Umbilical cable	Yes
	Connector box	No
	Optical connector	No
Field of View	475 x 475 μ m	
Optical resolution	0.7 μ m lateral, 7.0 μ m axial	
Imaging depth range	0 - 250 μ m, interactively variable in 4 μ m steps	
Imaging resolution	1024 x 1024 pixels, 12 bit digitisation 1024 x 512 pixels, 12 bit digitisation Real time image display @ 850lines/sec	

The FIVE 1 is a research tool suitable for whole animal medical research and live tissue microscopy in the course of ethically approved research. It is not a registered medical or veterinary device and is not approved for use on human subjects.

Images courtesy of: ¹ Prof A Polglase, Cabrini Monash Univ. Surgical Dept., Australia; ² W McLaren, Monash Univ. & C Jones, Univ. Western Australia, Australia; ³ R Kiesslich & M Goetz, Mainz Univ., Germany; ⁴ T Wells, Wellington School of Med., New Zealand.

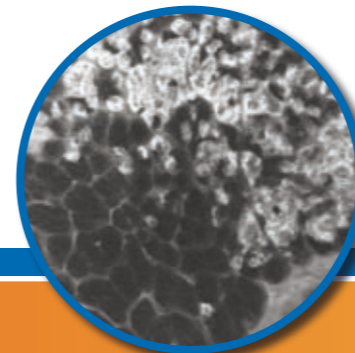
OptiScan | FIVE (1)

The Optiscan FIVE 1 is a compact and portable fluorescence endomicroscope specifically designed for *in vivo* investigation of animal tissues in all laboratory environments.

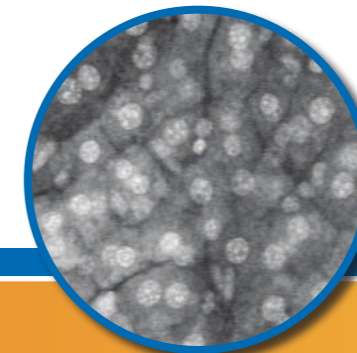
- Sub-micron resolution *in vivo* histology
- Real time functional and molecular imaging
- Simple handheld configuration designed for pre-clinical studies
- Precision Optical Sectioning
- Dynamically Variable Imaging Depth

Whether your pre-clinical questions demand mapping of microvascular architecture, sub-cellular distribution of drugs and molecular markers, *in vivo* cell tracking or localization of gene expression, the FIVE 1 combines exquisite microscopic resolution with the power of fluorescence imaging to provide direct, unequivocal answers.

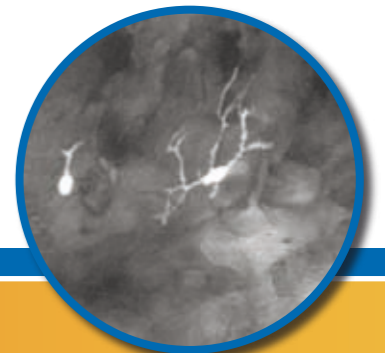
Fluorescence In Vivo Endomicroscopy



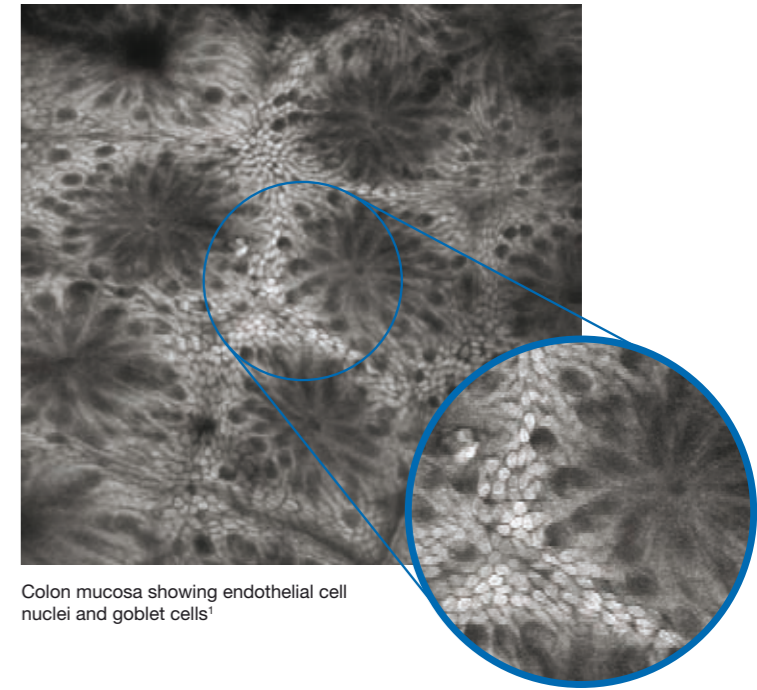
Pancreatic islet cells: somatostatin receptor labelling³



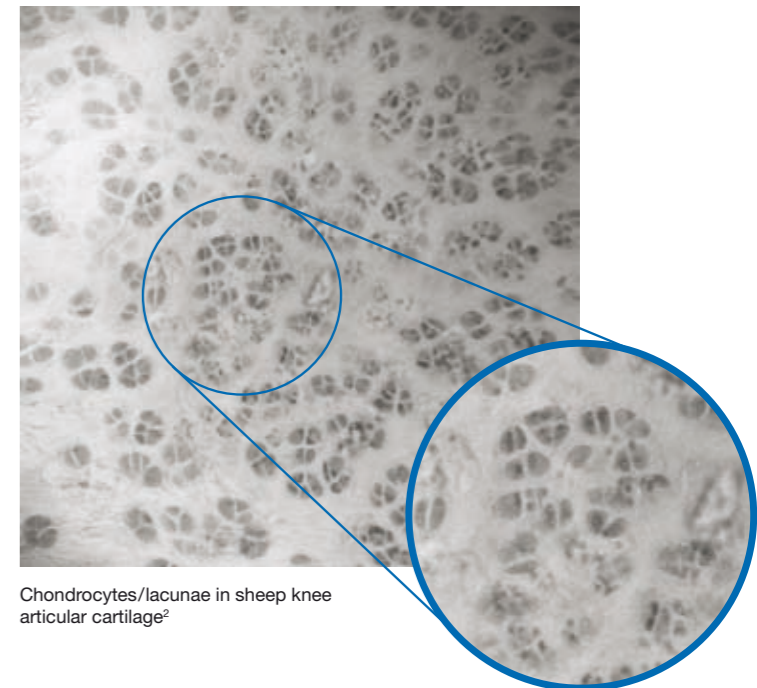
Sub-cellular and sub-nuclear imaging of hepatocytes in mouse liver *in vivo*²



Nerves and epithelial cells in cornea⁴



Colon mucosa showing endothelial cell nuclei and goblet cells¹

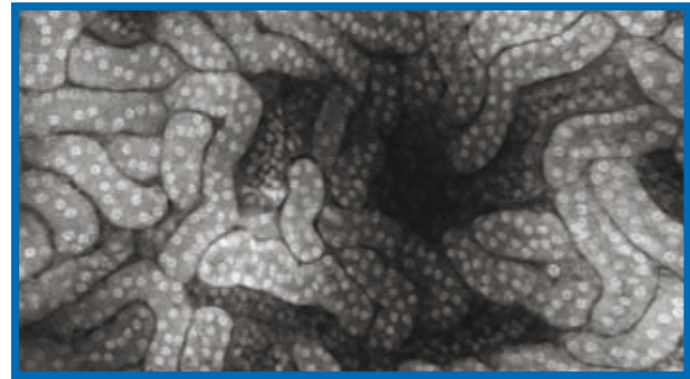


Chondrocytes/lacunae in sheep knee articular cartilage²

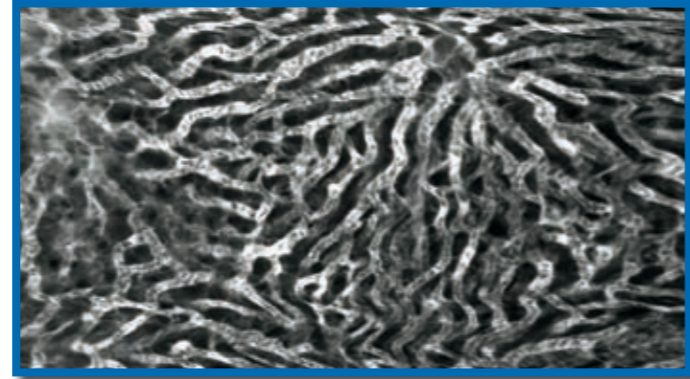
Until now, the highest resolution *in vivo* imaging available promised “near microscope” performance. Now the Optiscan FIVE 1 gives you true microscope performance.

The FIVE 1 is a turnkey system that is supplied pre-calibrated and ready for immediate use.

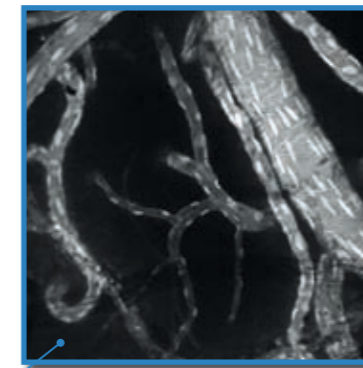
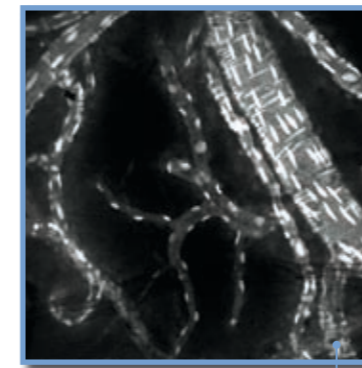
- The highest resolution *in vivo* microscopy available.
- No microscopy experience required
- Dynamic imaging depth adjustment – no need to change probes for different depths.
- Easy to use software and image capture.
- Fully integrated instrument software – image acquisition and image management database in one simple to use package.



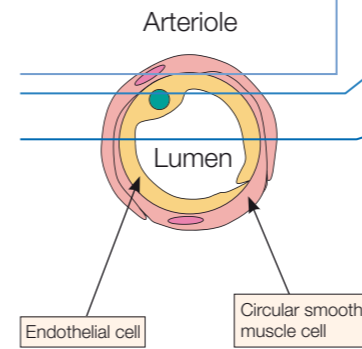
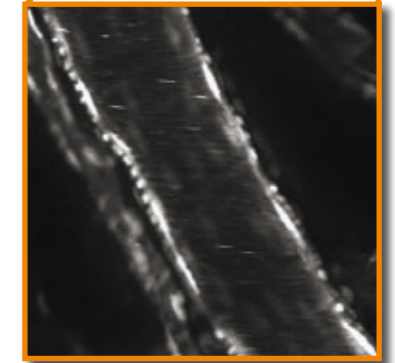
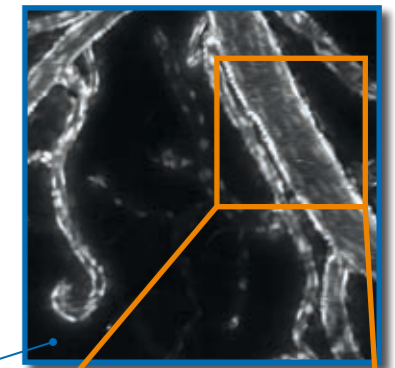
Mouse kidney³



Venous sinusoids in mouse liver showing flowing erythrocytes³



Gerbil brain³



Precision Optical Sectioning

High resolution optical sectioning with precise control of imaging depth isolates the cellular structures you need to see. For example, isolate individual cellular layers, even within a single arteriole or capillary.

Easy-to-use handheld endomicroscope probes ideally suited to pre-clinical environments.

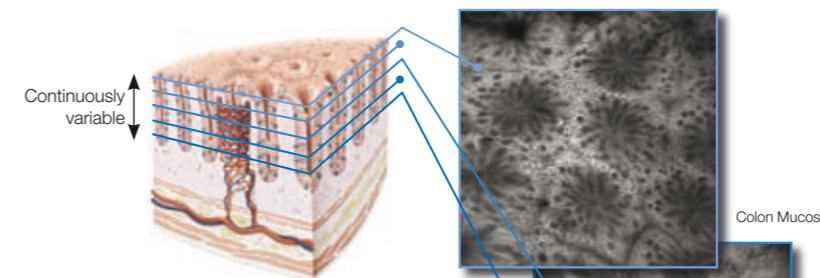
The confocal probe is available in 2 sizes: A “pen-like” version for direct imaging of easily accessible tissues, and a long version for laparoscopic applications in larger animals.

The handheld probe is simply placed into contact with the target tissue to reveal clear surface and sub-surface histological images without biopsy.



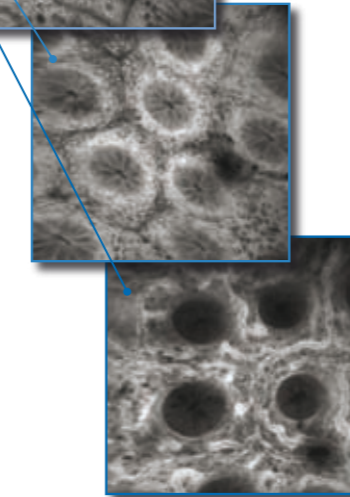
Optiscan’s patented fibre optic confocal technology has set the benchmark for *in vivo* confocal microscopy.

Dynamic and thorough investigation of 3D tissue structures *in vivo* is only possible due to the exquisite image quality and resolution combined with precise, continuous adjustment of imaging depth.



Interactive Depth Control

Interrogate the tissue as a truly 3-dimensional microscopic volume. The imaging depth can be interactively positioned in 4µm increments, anywhere from the surface of the tissue to hundreds of microns below. For example, mucosal tissue can be sampled from the surface epithelium, through lamina propria, to deeper microvascular networks in seconds.



The FIVE 1 is a full point scanning confocal microscope, with ultra high resolution, across a 475 x 475mm field of view. The fluorescence imaging parameters are optimised for a wide range of applications in pre-clinical animal models. Directly observe life’s molecular mechanisms without the need to sacrifice animals or remove tissues from the body.

- High sensitivity – real time microscopy on contact with fluorescently-labelled tissue.
- 488nm solid state laser excitation.
- 2 detection ranges standard, covering green through to NIR emitting fluorophores.
- Compatible with a vast range of fluorescent contrast agents and fluorescent proteins.