Flash Scanner FS4-R™

Rapid, label-free histological analysis

The Flash Scanner FS4-R is a state-of-the-art microscope that harnesses higher harmonic generation (HHG) to deliver rapid, label-free imaging of excised tissue, revealing intricate details at the cellular and subcellular levels.

Whether examining the spatial architecture of cells in the tumor microenvironment, studying the effects of drugs on cellular behavior, or gaining insights into tissue development without invasive labeling, the Flash Scanner FS4-R reveals both tissue topology and cellular details with unmatched speed and precision, marking a significant advancement in tissue analysis.

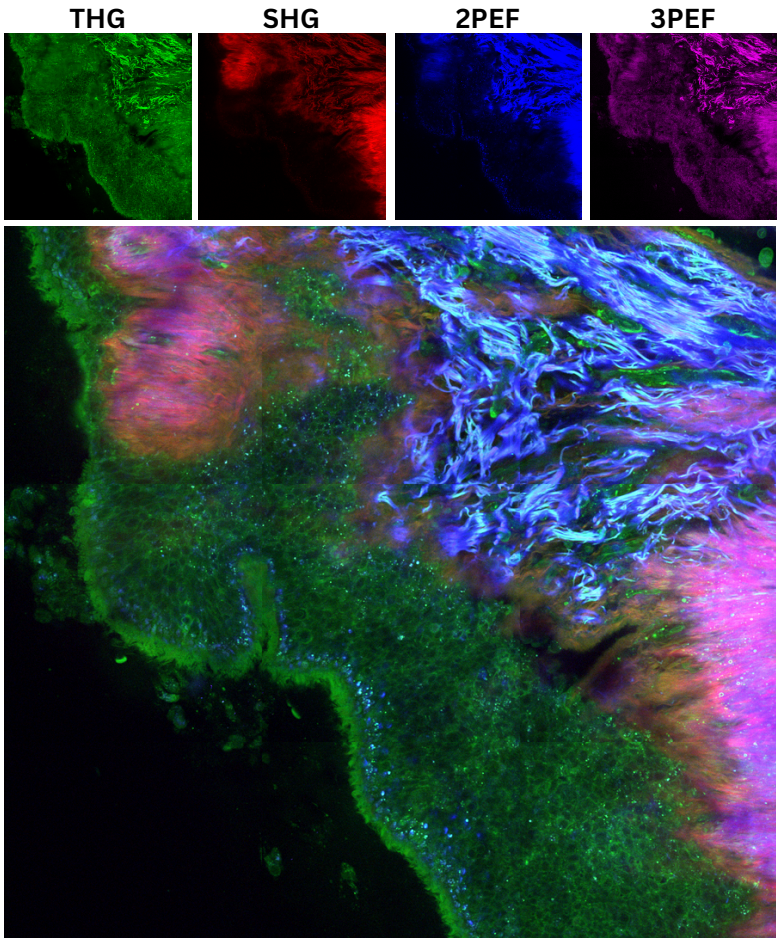
Subcellular resolution
Reveal key cellular and histological hallmarks using four distinct imaging modalities.

Label-free imaging
Visualize tissues without the use of labels or dyes, preserving samples for further analysis.

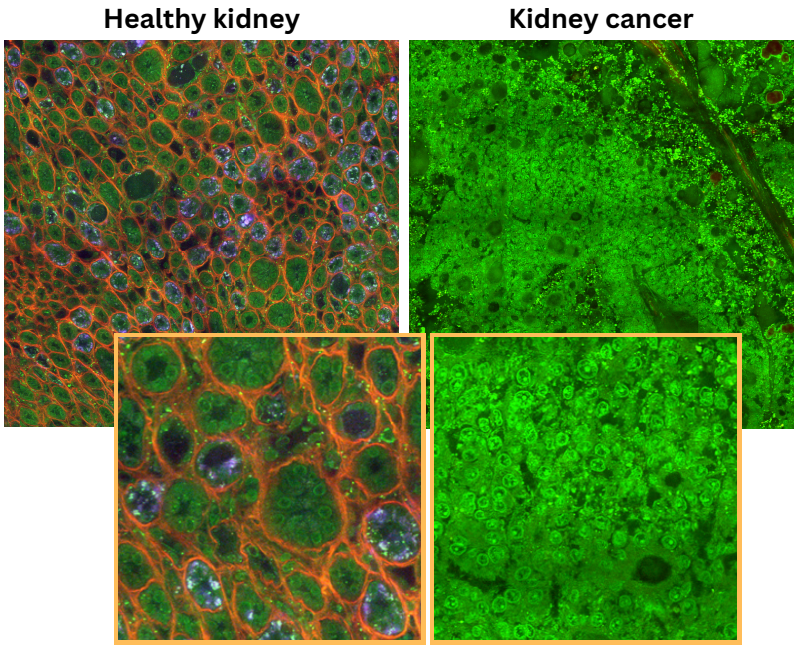
3D tissue visualization
Generate 3D images using automatic optical sectioning - no sample slicing required.

Quick turnaround
Minimize specimen preparation time and evaluate your samples in just minutes.

Publication-ready images
Capture vibrant, high-quality images that effectively convey the story behind your data.



Higher harmonic generation (HHG) microscopy. The Flash Scanner FS4-R simultaneously acquires third harmonic generation (THG), second harmonic generation (SHG), two-photon (2PEF) and three-photon (3PEF) excited autofluorescence signals to provide complementary information about biological specimens. This image shows a bronchoscopy biopsy with cilia covered epithelium and stroma including elastin and collagen fibers.



The Flash Scanner FS4-R imaging kidney tissue. The Flash Scanner FS4-R (on the left) is a compact, portable microscope that utilizes THG to capture all tissue interfaces, visualizing cellular structures (green), while SHG signals are generated by non-centrosymmetric molecules, mainly showing collagen fibers (red). Endogenous fluorophores, present in cell cytoplasm and elastin, emit signals detected by the 2PEF and 3PEF channels (blue and magenta). The magnified images reveal (left) normal kidney tissue with distal and proximal tubules and (right) renal cell carcinoma with cells with enlarged cell nuclei and prominent nucleoli.

Technical specifications	The Flash Scanner FS4-R
Optical resolution	0.4 µm (lateral), < 3 µm (axial)
Imaging modalities	Third harmonic generation (THG), second harmonic generation (SHG), 2-photon (2PEF) and 3-photon (3PEF) excited autofluorescence. Optional modality: confocal imaging
Field of view (single image)	400 µm × 400 µm
Max. mapped field	Ø = 20 mm (limited by the size of the sample dish)
Scanning speed	2 Mpixels/sec
Imaging modes	Inspection mode (1 pixel/µm) and high-quality mode (5 pixels/µm)
Imaging wavelength	1070 nm
Operating temperature and electrical requirements	18˚C to 30˚C; 110 - 230 VAC, 50 - 60 Hz

For research use only.

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