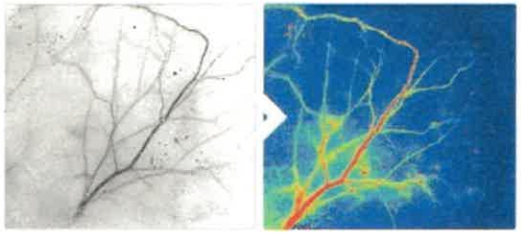
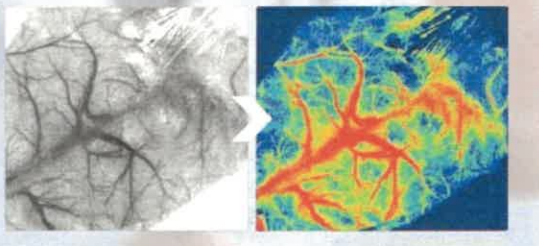
Case study

• Inner ear canal

Anesthetize the mice; stick the auricles flat and seamlessly on the glass slide with double-sided tape, and drop saline on the auricles; turn on the laser speckle flow meter, and use the 785 nm laser to the mouse auricle blood flow for imaging, observe and record in high signal-to-noise ratio mode.



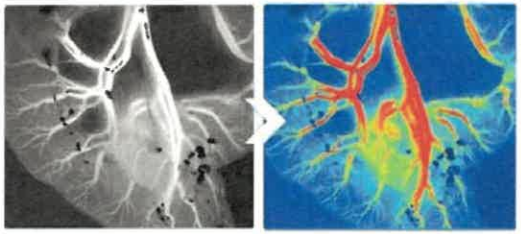


• Brain

Anesthetize the mice, remove the head hair and scalp, and fix the mice on a stereotaxic instrument; use a laser speckle blood flow meter at 785 nm, record in high signal-to-noise ratio mode, and observe the cerebral blood flow.

• Intestinal mucosa

Anesthetize the mice; open the abdominal cavity, select the area of the mesentery that is suitable for observation, and spread the warm Krebs solution (37 ° C) to keep the mesentery moist and maintain its normal physiological function; The 785 nm laser was used to image the intestinal mucosal blood flow of mice, and the high signal-to-noise ratio mode was used to observe and record.



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RWD

RFLSI III

Laser Speckle Imageing System

Blood perfusion imaging system

About RFLSI III

Laser Speckle imaging system RFLSI III based on new LSCI (Laser Speckle Contrast Imagine/LSCI) technology is designed, with noninvasive, non-contact, high temporal resolution (up to 140 FPS), high spatial resolution (2048 x 2048 pixel) and the fast imaging technology advantage, as the foundation of life science research provides a real-time dynamic flow monitoring records, is to know the tissue and organ pathological or physiological indexes vital data. At the same time, the instrument does not need any contrast agent, and realizes the functional requirements of observing the blood flow distribution state and the relative changes of blood flow value in the blood vessels by the resolution of milliseconds and microns.

The features of RFLSI III

Non-invasive, non-contact, without any contrast agent.

High temporal resolution (up to 140 frames / second), high spatial resolution (2048 × 2048 pixels).

The original pseudo-color map data can be exported, which is convenient for big data or other software analysis.

Multiple indicators output: blood flow perfusion, tube diameter, tube angle analysis.

Performance advantages

- Online and offline analysis of vascular perfusion volume, tube diameter, tube angle and other data to meet hemodynamic research.
- Multiple data acquisition methods including continuous acquisition, specified time interval acquisition, specified frame number acquisition, etc.
- Indicating laser plus autofocus function makes your instrument easy to use.
- The high-definition camera (2048 x 2048 for all the camera) helps you to see the end of blood vessels and open the world of blood vessel microcirculation images.
- The high-speed camera (up to a maximum frame rate of 140 frames per second) allows us to record changes every second and record more details of blood vessel changes after intervention.
- Package-type supporting solutions and timely after-sales service will help you take a step ahead in your scientific research.

Parameter

Hardware

Model	RFLSI III	Max resolution at 20×20 mm	3 μm/pixel
Band	RWD, (China)	Wavelength	785 nm
Monitoring Scope	0-5000PU	Indicated laser wavelength	660 nm
Image size	< 90 x 90mm	Region of intersting	YES
Zoom range	0.6x-7.2x optical zoom with auto-focus	The shape of ROI	Square; Roundness; Polygon
Imaging camera pixels	5.0 million (2048 x 2048 for all the camera)	Vascular diameter	Multiple vessels
		Video display	avi

Working environment

Power	220V ~ 240V, 50/60Hz
Operating temperature	15-30°C
Operating humidity	20-80%
Light requirements	Normal ambient light

Application

- Vascular regeneration in the repair of auricle damage in nude mice;
- Functional response of the cerebral cortex during cerebral ischemia and reperfusion in rats and mice;
- Functional response of blood flow in the somatosensory region of the cerebral cortex in rats and mice;
- Light and electricity Functional responses to blood flow in somatosensory regions of large and mouse cortex induced by external stimuli;
- Brain function and brain injury research;
- Cerebral blood flow imaging related to cerebral cortex, physiology and pathology;
- Circulation and metabolism under various physiological and pathological conditions
- Animal models of pathology in in vivo imaging of cerebral cortex blood channels (such as MCAO);
- Study of intestinal mucosal blood vessels;
- Study of lower limb ischemia and vascular survival in rats and mice;
- Study of cortical diffusion inhibition.