

T400-Series Surgical Protocol

Rabbit Auricular Artery: Chronic Blood Flow Measurement

APPLICATION BASICS

Site:	Auricular artery
Species:	Rabbit, NZ White
Weight:	3.5 - 4 kg
Duration:	Chronic
Vessel Diameter:	1 mm
PROBE	
Size:	1 mm
Reflector:	L with sliding cover
Cable Length:	60 cm
Catalog #:	MC-1PRB-LS-WC60-CM4S-GC
FLOWMETER	
	TS420 Perivascular Module

Application

When used in conjunction with Laser Doppler flowmetry (see Rabbit Ear Acute Perfusion LD-108-sp) the rabbit ear can be used as a longitudinal model for the study of human digital pathophysiology.

Surgical Approach

PREPARATION

Before instrumenting the rabbit, acclimate the animal to a restrainer for a week with repeated restraint conditioning of increasing durations for up to an hour.

INSTRUMENTATION

Anesthetize the rabbit with a mixture of ketamine (30 mg/kg) and xylazine (8mg/kg) administered intramuscularly. Administer supplemental dosages as needed. Isolate the auricular artery carefully from the neurovascular bundle on the dorsal, basal portion of the ear and place the artery within the lumen of a 1PRB Flowprobe (Fig. 2). Hold the Probe in place with cyanoacrylate glue (Nexaband®, Tri-Point Medical, Raleigh, NC). From the Probe head, pass the Probe cable and connector beneath the skin down the base of the ear, across the top of the cranium and out through a cylindrical anchor attached to the rabbit's skull (Fig. 3).

MEASUREMENTS

Place the rabbit in a restrainer, remove the screw-on cap of the electrical connector and connect the Flowprobe with the transit-time Flowmeter. Record measurements via a chart record or data acquisition system.

Flow Ranges Observed

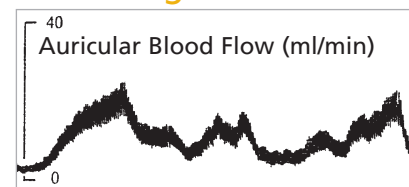


Fig. 1: Auricular blood flow in a conscious rabbit seven days after surgical implantation of the Flowprobe. Range: < 1 - 25 ml/min.

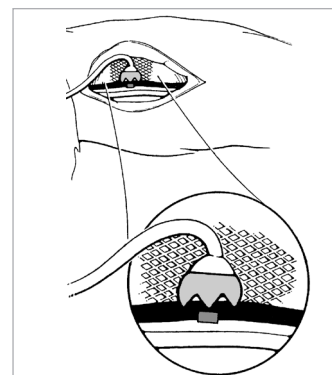


Fig. 2: Transit-time Flowprobe positioned over the rabbit auricular artery and held in place with cyanoacrylate glue applied over a Dacron mesh (cross-hatched).

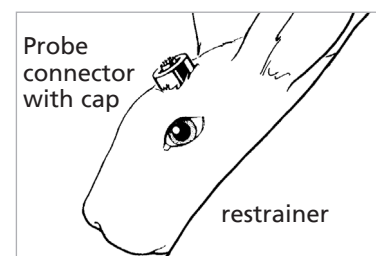


Fig. 3: Exit site at top of skull for the transit time Probe connector with cap.

Rabbit Auricular Artery: Chronic Blood Flow Measurement Cont.

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REFERENCES

Smith TL, Korman LA, "Development of a New Rabbit Ear Model for Longitudinal Study of Digital Pathophysiology," *Microsurgery* 1992; 13: 325-331.

Laser Doppler Protocol LD-108-sp, Transonic Systems Inc.



Transonic Systems Inc. is a global manufacturer of innovative biomedical measurement equipment. Founded in 1983, Transonic sells "gold standard" transit-time ultrasound flowmeters and monitors for surgical, hemodialysis, pediatric critical care, perfusion, interventional radiology and research applications. In addition, Transonic provides pressure and pressure volume systems, laser Doppler flowmeters and telemetry systems.

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