

# BLF22 Surgical Protocol

## Local Cerebral Perfusion Measurement in Mice

### APPLICATION BASICS

Site:	Cerebral Cortex
Species:	CFW Mice
Weight:	30 grams
Duration:	Acute
<b>PROBE TYPE:</b>	<b>N: 18 gauge needle</b>

### TYPE N (18 gauge needle probe) (ABLPHN18)



Diameter: 1.2 mm

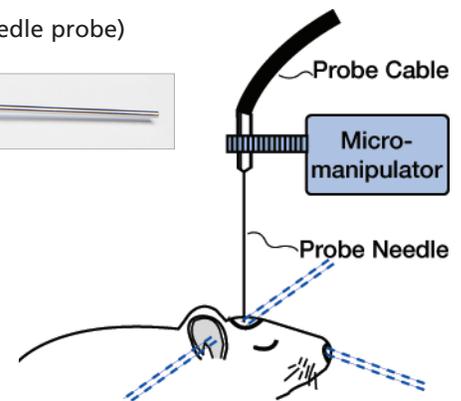


Fig. 1: Type N probe shown clamped in position for perfusion measurements in the mouse forebrain. The mouse head is stabilized in a stereotaxic device.

### Application

Effects of transient forebrain ischemia. Effects of various drugs on forebrain perfusion

### Surgical Protocol

1. Induce anesthesia in the mouse using chloral hydrate (100 mg/100g, IP).
2. Make a ventral incision in the neck for tracheostomy (1.27 mm OD). For bilateral occlusion of the common carotid artery, place snares (5-0 silk) around each carotid artery.
3. Place the mouse on a heating pad to maintain rectal temperature at 37°C. Secure the head in a stereotaxic apparatus.
4. Make a midline incision and reflect the scalp. Prepare a small circular craniotomy in the parietal bone taking care not to disrupt the dura.
5. Using a stereotaxic micromanipulator, position the Laser Doppler Needle Probe on the dural surface of the parietal cortex. Avoid areas directly over large blood vessels. The Probe must be mounted so that it touches the dura, without applying pressure, as this would occlude the vessels and reduce perfusion in the area of interest. This is accomplished by seeing that neither the dura nor cortex are visibly indented by the Probe. If there is any question of too much pressure, observe the perfusion readout on the Tissue Perfusion Monitor. Then withdraw the Probe slightly and observe the perfusion readout again. A sustained increase indicates the previous pressure was too great.
6. After data recording has begun, tighten the snares to occlude the carotid arteries.

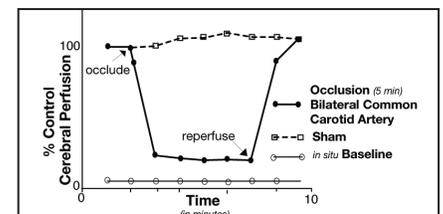


Fig. 2: Bilateral occlusion of the common carotid artery, followed by reperfusion

### ACKNOWLEDGEMENT

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### REFERENCES

Willette RN, Clark RK, Lee EV, Barone FC, "Transient Forebrain Ischemia in the CFW Mouse," Proceedings of the 1992 Federation of the Am Soc Exper Biol 1992; 13: Abst. 500.

Barone, FC et al, "Murine Models of Cerebral Ischemia, in Central Nervous System," Trauma, ed by Ohnishi ST, Ohnishi T, CRC Press, New York, pp. 147-167, 1995.

### Perfusion Ranges Observed Tissue Perfusion Units (TPU)

NORMAL PERFUSION	COMMON CAROTID OCCLUSION	
20 TPU	Unilateral	Bilateral
	10 TPU	3 TPU