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U Mass - Surgery - carotid artery cannulation

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Protocol status: Working
We use this protocol and it's working

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20335

ABSTRACT

Summary:

Chronic indwelling catheter is placed in the carotid artery for blood sampling during experiments. Survival surgery is performed in anesthetized mice, and mice recover from surgery after 4~5 days.

MATERIALS

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- ⊗ 0.9 % Sodium Chloride Injection USP B.Braun Medical Inc Catalog #NDC0264-4001-55
- ⊗ Ketamine Vedco Catalog #NDC50989-996-06
- ⊗ Xylazine AnaSed /LLOYD Catalog #NADA#139-236
- ⊗ Heparin Hospira(Pfizer) Catalog #NDC0409-2723-01
- ⊗ HelixMark Standard Silicone Tubing Helix Medical, Inc. Catalog #0.012" ID / 0.025" OD
- ⊗ Ketoprofen Patterson Veterinary Catalog #07-803-7389

Note:

B Braun Medical, Cite this ([B Braun Sharing Expertise](#), [RRID:SCR_007148](#))
Hospira, [RRID:SCR_003985](#)

Keywords: carotid artery,
mice

- 1 Anesthetize mice with an intraperitoneal injection of ketamine (100 mg/kg body weight) and xylazine (10 mg/kg body weight).
- 2 Check the level of general anesthesia using a pinch stimulus of animal's tail and/or foot.
- 3 Make a transverse incision (~0.5 cm) over the trachea, and isolate the carotid artery.
- 4 Carefully introduce a silastic catheter (PE 10) into the vessel. The catheter should be filled with a saline solution containing heparin (10 U/ml) and plugged.
- 5 Guide the catheter to the back of the neck, and place under the back skin to prevent its accessibility from the mouse.
- 6 Tie a silk to the catheter, and make a small opening at the back of neck.
- 7 This silk, which is partially exposed, will be used/pulled on the day of experiment to expose the catheter.
- 8 On the day of experiment, flush the catheter using a heparinised saline solution.

- 9 All surgical procedures should be performed using standardized aseptic techniques, and all surgical tools should be autoclaved following the surgery.
- 10 Apply post-operative care based on the institution's animal care and use committee standard operating policy.