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U Mass - Surgery – jugular vein cannulation

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Protocol status: Working

We use this protocol and it's working

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Abstract

Summary:

Chronic indwelling catheter is placed in the jugular vein for intravenous infusion and injection of drug, hormones, and metabolites. Survival surgery is performed in anesthetized mice, and mice recover from surgery after 4~5 days.

Materials

MATERIALS

⊗ 0.9 % Sodium Chloride Injection USP **B.Braun Medical Inc** Catalog #NDC0264-4001-55

⊗ Ketamine **Vedco** Catalog #NDC50989-996-06

⊗ Xylazine **LLOYD Inc (Anased)** Catalog #NADA#139-236

⊗ Heparin **Pfizer (Hospira)** 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

Troubleshooting

- 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 right jugular vein.
- 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.