Surgery – carotid artery cannulation

Version: 1
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(note that the following list should be linked to the appropriate location.)

Summary: *(This area will include a brief description of what the protocol is used for and why someone would need to use it.)*

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

Reagents and Materials: *(This should be a comprehensive list of stock solutions and material. The reagent list for the stock solutions is included in the reagent preparation area that is included at the end of this SOP.)*

Reagent/Material	Vendor	Stock Number
0.9 % Sodium Chloride, Injection, USP	B.Braun Medical Inc	NDC0264-4001-55
Ketamine	VEDCO	NDC50989-996-06
Xylazine	AnaSed (LLOYD)	NADA#139-236
Ketoprofen	Fort Dodge Animal Health Care	NDC056-4396-01
Heparin	Hospira	NDC0409-2723-01
HelixMark Standard Silicone Tubing	Helix Medical, Inc.	0.012'' ID / 0.025'' OD

Protocol:

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.