Chronic drug delivery

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.)*

A subcutaneous or intraperitoneal implantation of Alzet osmotic pump is used to chronically administer selected drug in mice. Chronic drug delivery may be used to examine intermediate to long-term effects of selected drug on obesity, insulin resistance, and metabolism.

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
Osmotic pump	Alzet	1007D

Protocol:

1. Anesthetize mice with an intraperitoneal injection of ketamine (100 mg/kg body weight) and xylazine (10 mg/kg body weight).
2. Shave hair at the incision site on the back.
3. Make an incision (~0.5 cm) using sterilized scalpel between the scapulae.
4. Subcutaneously insert an Alzet mouse osmotic pump containing drug or placebo.
5. Suture or close the incision site using sterilized staples.
6. Administer ketoprofen to minimize pain and house mice individually.

Reagent Preparation: *(This area may have several different preparations with the table of contents below.)*

Reagent 1: Drug or placebo containing osmotic pump

Reagents and Materials

1. Alzet osmotic pump

Procedure

1. Prepare drug or placebo solution based on dosage.
2. Load solution into a syringe.
3. Hold the pump with sterilized tweezers and slowly fill the solution (drug/placebo).
4. Close the hole.
5. For immediate delivery of compound upon subcutaneous implantation, osmotic pumps may be warmed by submerging them in warm water immediately prior to surgery.