May 10, 2019

Working

U Mass - Chronic drug delivery

Jason Kim[1]

[1]University of Massachusetts

dx.doi.org/10.17504/protocols.io.xuefnte

Mouse Metabolic Phenotyping Centers

Tech. support email: **info@mmpc.org**

Lili Liang

ABSTRACT

Summary:

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.

EXTERNAL LINK

https://mmpc.org/shared/document.aspx?id=151&docType=Protocol

MATERIALS

NAME	CATALOG #	VENDOR	CAS NUMBER	RRID
Osmotic pump	1007D	Alzet		

MATERIALS TEXT

Reagent Preparation:

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.

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.

Subcutaneously insert an Alzet mouse osmotic pump containing drug or placebo.

This is an open access protocol distributed under the terms of the **Creative Commons Attribution License** (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

4

5 Suture or close the incision site using sterilized staples.

6 Administer ketoprofen to minimize pain and house mice individually.

This is an open access protocol distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

This is an open access protocol distributed under the terms of the **Creative Commons Attribution License** (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited