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U Mass - Chronic/acute phloridzin treatment

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We use this protocol and it's working

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Abstract

Summary:

Phloridzin is a potent inhibitor of renal glucose reabsorption and may be used to lower serum glucose levels. Phloridzin may be administered chronically to induce glycosuria and lower hyperglycemia in diabetic mice. Phloridzin may be administered acutely to reduce serum glucose levels for experiments in diabetic mice.

Materials

MATERIALS

Phloridzin **Merck MilliporeSigma (Sigma-Aldrich) Catalog #**P3449

Osmotic pump **Alzet Catalog #**1007D

Note:

Sigma-Aldrich, RRID:SCR_008988

Troubleshooting

1 **For chronic phloridzin treatment:**

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 phloridzin (0.4 mg/kg body weight).

5. Suture or close the incision site using sterilized staples.

6. Administer ketoprofen to minimize pain and house mice individually.

7. Alternatively, phloridzin may be chronically administered using a twice daily intraperitoneal injection at 0.4 mg/kg body weight.

2 **For acute phloridzin treatment:**

1. Survival surgery is performed to establish a chronic indwelling catheter at 5~6 days prior to experiment for intravenous infusion. (refer to M1023: Surgery-jugular vein cannulation)

2. Mice are fasted overnight (~15 hours) or for 5 hours prior to the start of experiment.

3. Place a mouse in a rat-size restrainer with its tail tape-tethered at one end.

4. Expose and flush the intravenous catheter using saline solution. Then, connect the catheter to the CMA Microdialysis infusion pump.

5. Phloridzin is intravenously infused at 100 μg/kg/min for 60~120 min to lower serum glucose levels in hyperglycemic, diabetic mice.