



Chronic/acute phloridzin treatment

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

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

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.

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
Phloridzin	Sigma	P3449
Osmotic pump	Alzet	1007D

Protocol:

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.

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.