Macrophage Depletion Kit

Introduction

To investigate the function of macrophages in a complex in vivo environment, depletion experiment can be utilized. Clodronate liposomes are an effective and versatile way to deplete macrophages in vivo. Clodronate liposomes function on the principle of delivering a potent macrophage-depleting agent, clodronate, encapsulated within a lipid bilayer. When administered in vivo, these liposomes are specifically taken up by macrophages through a process known as phagocytosis. Once internalized, the liposomes release clodronate into the macrophage, ultimately resulting in cell death through apoptosis.

This product is a combination of Clodronate Liposomes (K2721) and PBS Liposomes (K2722), in which PBS Liposomes can be used as experimental controls. Clodronate liposomes can allow selective depletion from tissues of interest and can be used on transgenic mice. This product supports a variety of administration methods, including intravenous injection, intraperitoneal injection, subcutaneous injection, intranasal injection, and direct injection into the testicles. The injection dose varies according to the body weight of the mouse, the frequency of injection, the mode of administration, and the experimental needs.

Components and Storage

Components \ Size	5 mL (each)	10 mL (each)	Storage
Clodronate Liposomes	5 mL	10 mL	4°C
PBS Liposomes	5 mL	10 mL	4°C
Shipping: Blue ice	Shelf life: 6 months		

Properties

Component	Clodronate Liposomes
Encapsulated Drug	Clodronate, Disodium Salt
Lipid composition	Phosphatidylcholine and cholesterol
Buffer	10 mM Na_2HPO_4, 10 mM NaH_2PO_4, 140 mM NaCl
Drug Concentration	5 mg/mL

Component	PBS Liposomes
Lipid composition	Phosphatidylcholine and cholesterol

Buffer	10 mM Na_2HPO_4, 10 mM NaH_2PO_4, 140 mM NaCl

Protocol

The injection protocol can be determined and optimized depending on the experiments. Here provides a reference intraperitoneal injection protocol.

1. Before injection, equilibrium Clodronate Liposomes and PBS Liposomes to room temperature, but the temperature cannot exceed 30°C.
2. Upside down for 8-10 times. Connect 26 Gauge needle to a 1 mL syringe and suck liposomes. The syringes sucking Clodronate Liposomes and PBS Liposomes should be different.

***Note:** Some liposomes might settle to the bottom of the vial. Mix gently Clodronate Liposomes and PBS Liposomes before use.

3. Grasp the mouse with your left hand and immobilize the mouse's head and limbs. Tilt the mouse slightly and let the head face the ground, so that the organs concentrated in the abdomen move towards the head, away from the injection site.
4. Invert the syringe 6 times before injection and mix the liposomes again.

***Note:** Standing for a long time may cause liposomes to precipitate in the syringe, so mix again before use.

5. Insert the needle into the lower right side of the abdomen an angle of 30 degrees. Inject 200 μL liposomes per mouse with Clodronate Liposomes (experiment group) and PBS Liposomes (control group).

Note

1. This product should not be frozen or exposed to high temperatures. Temperatures that are too high (30°C) or too low (0°C) can disrupt liposome structure.
2. Be sure to warm this reagent to room temperature and mix well before use.
3. This product is strictly forbidden to come into contact with organic solvents such as chloroform, methanol, ethanol, etc., otherwise the liposome structure will be destroyed.
4. This product is not recommended to be diluted unless required for special experiments.
5. For your safety and health, please wear lab coats and gloves during the experiment.
6. For research use only. Not to be used in clinical diagnostic or clinical trials.

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