

EasySort™ Mouse CD4⁺T Cell Isolation Kit

Cat. No: MIM002N

Size: 10/100/200 Assays

Component	Component Name	10 Assays	100 Assays	200 Assays	Storage
MIM002NA	EasySort™ Mouse CD4 ⁺ T Beads Streptavidin 1.0-N	90 µL	900 µL	900 µL×2	2~8°C
MIM002NB	EasySort™ Mouse CD4 ⁺ T Cell Isolation Cocktail	27 µL	270 µL	270 µL×2	2~8°C
	Manual			1 copy	

Storage

Store at 2-8°C with shading light for 1 year. Avoid freezing and thawing.

Detection Principle

Mouse CD4⁺T cell isolation is a negative selection method to isolate CD4⁺T cells from single cell suspension of mouse spleen cells or other tissues. The principle is to use different biotinylated monoclonal antibodies to label non target cells (non-CD4⁺T cells), and then remove them by streptavidin-labelled magnetic beads, so the unstimulated primitive state CD4⁺T cells are isolated.

EasySort™ mouse CD4⁺T cell isolation kit is a product that can isolate high purity mouse CD4⁺T cells quickly and easily. The kit is suitable for isolation of CD4⁺T cells from mouse spleen and lymph nodes, and the isolated cells can be directly used for downstream applications.

Reagents and Materials Not Supplied

1. Reagents:

PBS, fetal bovine serum (FBS), EDTA

2. Materials:

Disposable sterile syringe, 70 µm mesh nylon strainer, ophthalmic scissors, ophthalmic forceps, 1.5 mL/2 mL

EP tube, 15 mL centrifuge tube, flow tube

3. Instrument:

Optical microscope, centrifuge, 5 mL magnetic rack

Experimental Operation

NOTE: The following operations must be performed under sterile conditions

➤ Isolation buffer preparation

Add fetal bovine serum (final concentration of 2%) and EDTA (final concentration of 2 mM) and filter the prepared buffer with 0.22 µm filtration.

NOTE: Sealed store the prepared buffer at 4°C and use within 1 week. In addition, 2% fetal bovine serum can be replaced by 0.5% BSA.

For Research Use Only

➤ Mouse spleen single cell suspension preparation

- Take the fresh mouse spleen to avoid excessive connective tissue attached.
- Grind the spleen through a 70 μm mesh nylon strainer, rinse the cell sieve with pre-cooled PBS, and collect the cell suspension in a 15 mL centrifuge tube and centrifuge at 300 g for 5 min.
- Discard the supernatant, resuspend the splenocytes with isolation buffer, and filter the cells through a 70 μm mesh nylon strainer, then count the cells. Adjust the cell density to 2×10^8 cells/mL.

Note: Generally, about $2 \sim 4 \times 10^8$ splenocytes can be obtained from each mouse.

➤ Cell Sorting

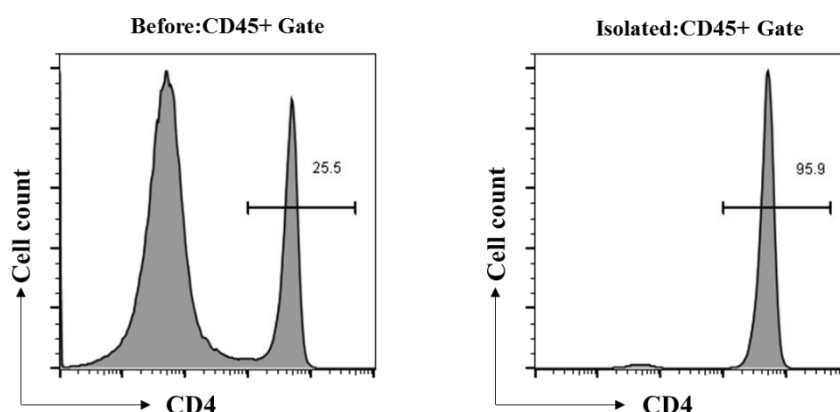
- Prepare 50 μL of cell suspension (about 1×10^7 cells), add 2.7 μL Mouse CD4⁺T Cell Isolation Cocktail, mix fully and incubate for 5 min at room temperature.
- Add isolation buffer to a final volume of 2 mL, centrifuge at 300 g for 5 min. Discard the supernatant, and then resuspend the cells with 50 μL isolation buffer.
- Wash Beads Streptavidin 1.0-N: Vortex beads for 20 seconds, add 9 μL Beads in 1.5 mL EP tube. Put the tube on a 5 mL magnetic rack (self-provided) and stand for 30 s. Remove the supernatant by magnetic separation, then resuspend beads with 1 mL isolation buffer, and stand for 5 minutes at room temperature. Remove the supernatant by magnetic separation, then resuspend Beads with 9 μL isolation buffer.
- Transfer the cells to the bottom of the flow tube (**Note: Avoid adding along tube walls**), add 9 μL washed Mouse CD4⁺T Beads Streptavidin 1.0-N, mix fully and incubate at room temperature for 5 min.

Note:

- If more than 1×10^7 cells are to be sorted, increase the amount of Mouse CD4⁺T Cell Isolation Cocktail and Mouse CD4⁺T Beads Streptavidin 1.0-N proportionally while ensuring the cell density remains 2×10^8 cells/mL. If fewer than 1×10^7 cells are to be sorted, resuspend the cells with 50 μL sorting buffer, add 2.7 μL Mouse CD4⁺T Cell Isolation Cocktail and 9 μL washed Mouse CD4⁺T Beads Streptavidin 1.0-N.
 - The 5 mL flow tube is suitable for less than 2×10^8 cells.
- Add isolation buffer to a final volume of 2.5 mL, mix fully with a pipette by blowing up and down for 7-8 times until no particles of magnetic beads are visible. Put the tube on a 5 mL magnetic rack (self-provided) and stand for 3 min.
 - Transfer the cell suspension to a clean centrifuge tube, centrifuge at 300 g for 5 min. Discard the supernatant, resuspend the cells with isolation buffer required for the subsequent experiments.

Note: If more isolated cells are needed, repeat step e-f and mix the cell suspension.

Typical data



CD4⁺T cells were isolated from the spleen cells of C57BL/6 mice, and were stained with Elab Fluor® Violet 450 Anti-Mouse CD45 Antibody (clone 30-F11) and PE Anti-Mouse CD4 Antibody (clone GK1.5). The purities of the start and final isolated fractions were 25.5% and 95.9%, respectively.

Cautions

1. This kit is for research use only.
2. Please take safety precautions and follow the procedures of laboratory reagent operation.
3. Avoid freezing and thawing during the use and storage of the beads.
4. The cell clusters in the cell suspension will affect the purity of cell isolation. Therefore, cell suspension should be filtered with a 70 µm mesh nylon sieve before formal isolation.
5. Cell suspension should be isolated immediately after preparation, the longer the storage time, the greater the impact on cell activity.
6. The cell suspension and magnetic beads should be added directly to the bottom of flow tube to avoid sticking to the wall, resulting in insufficient reaction and affecting the isolation efficiency.
7. In order to ensure the activity of the cells, the whole process of the experiment should be completed on ice as much as possible, except for the incubation at room temperature.
8. It is recommended to use low adsorption pipette tips and centrifuge tubes to avoid the loss of magnetic beads and antibodies due to adsorption.
9. The kit should be used in conjunction with a magnetic rack.
10. Sample type, sample preparation and experimental operation have an important impact on the final isolation cell purity.