

Mouse CD4+ T Cell Isolation Kit (positive selection)

Description

TargetMol's Mouse CD4+ Cell Isolation Kit (positive selection) contains superparamagnetic beads covalently coated with monoclonal antibodies that specifically recognize the CD4 membrane antigen, which is primarily expressed on mouse helper/inducer T cells. The kit uses CD4 Capture Antibody to label CD4+ cells, followed by capture of the target cells using Releasable Magnetic Beads. The magnetic beads are subsequently detached from the cell surface using Magnetic Beads Release Buffer, resulting in mouse CD4+ cells free of magnetic bead labeling.

This rapid and gentle cell isolation method does not require a separation column and helps ensure high purity, recovery, and viability of the isolated CD4+ cells. The isolated CD4+ cells can be used for downstream molecular biology and cell biology experiments.

Recommended Products

1. Mouse Cells

Cell Type	Spleen	Lymph Node	Peripheral Blood	Bone Marrow	Tumor Tissue
CD3+ T Cell	C0061		/	/	/
CD4+ Cell	C0062 (Preferred), C0067 (Optional)		C0067	/	C0067
CD8+ Cell	C0063 (Preferred), C0068 (Optional)		C0068	/	C0068
Neutrophil	C0064	/	C0064	C0064	/
CD3+ Cell Removal	C0152	C0152	/	/	/
CD3/CD28 T Cell Activation	C0180	/	/	/	/
B Cell	C0218	C0218	/	C0218	/

2. Human Cells

Cell Type	Peripheral Blood	Umbilical Cord Blood
CD3+ T Cell	C0065	/
CD34+ Cell Enrichment	C0066	C0066
CD4+ T Cell	C0148	/
CD8+ T Cell	C0149	/
CD3/CD28 T Cell Activation	C0150	/
CD66b+ Cell	C0151	/
Neutrophil	C0216	/
CD3+ Cell Removal	C0217	/

Product Features

1. High Purity: High-purity target cell population can be acquired after isolation with efficient enrichment of target cells.
2. Broad Sample Compatibility: Target cells can be directly captured from PBMCs or whole blood.
3. Magnetic Bead Release Technology: The isolated cells are free of magnetic beads, minimizing interference with downstream experiments.

Product Applications

Suitable for the isolation of CD4+ cells from mouse lymphoid organs or other tissues, such as the spleen and lymph nodes.

Packing List

Catalog No.	Product Name	Packing (for 1×10^9 cells)
C0067-1	CD4 Capture Antibody	200 μ L
C0067-2	Releasable Magnetic Beads	2 mL
C0067-3	Magnetic Beads Release Buffer	40 mL

Instructions

Example: Isolation of CD4⁺ T Cells from Mouse Spleen

1. Preparation of Single-Cell Suspension: Place the spleen on a 70 μ m cell strainer, gently grind the tissue, and rinse the strainer with pre-cooled PBS. Collect the cell suspension into a 50 mL centrifuge tube and centrifuge at $500 \times g$ for 5 min.

2. After centrifugation, discard the supernatant. Add 5 mL RBC Lysis Buffer (ACK) and lyse at room temperature for 5 min. Then add 20 mL PBS and centrifuge at $500 \times g$ for 5 min.

Note: The lysis time and volume may be adjusted based on the buffer used. A small number of residual red blood cells will not significantly affect downstream separation or purity.

3. After centrifugation, discard the supernatant. Resuspend the splenocytes in PBS and filter the suspension through a 70 μ m cell strainer. After cell counting, centrifuge again at $500 \times g$ for 5 min.

Note: To prevent tissue debris and cell clumps from affecting the purity of subsequent cell isolation, the cell suspension must be filtered through a cell strainer.

4. After centrifugation, discard the supernatant. Resuspend the cells in Isolation Buffer and adjust the cell concentration to 1×10^8 cells/mL.

Note: Recommended Isolation Buffer formulations: PBS containing 2 mM EDTA and 2% FBS; or PBS containing 2 mM EDTA and 0.5% BSA. The buffer should be sterilized in advance by filtration through a 0.22 μ m membrane filter.

5. Add 500 μ L of cell suspension (containing 5×10^7 cells) to the bottom of a sterile flow cytometry tube, followed by 10 μ L CD4 Capture Antibody. Mix thoroughly and incubate at 4°C for 15 min.

Note: When adding the cells to the bottom of the flow cytometry tube, avoid dispensing the suspension along the tube wall. If more cells are to be isolated, increase the amount of CD4 Capture Antibody proportionally. Depending on the magnetic rack used, a centrifuge tube may also be used for cell isolation.

6. Magnetic Bead Pretreatment: Vortex to fully resuspend the magnetic beads. Transfer the required amount of magnetic beads into a 1.5 mL centrifuge tube, add 1 mL Isolation Buffer, and centrifuge at $10,000 \times g$ for 1 min. Discard the supernatant.

Repeat the above washing steps once. Resuspend the magnetic beads in the same volume of Isolation Buffer as the original bead volume. If 20 μ L magnetic beads are used for washing, resuspend the washed beads in 20 μ L Isolation Buffer.

7. After cell incubation, add 100 μ L pretreated Releasable Magnetic Beads to the flow cytometry tube. Mix thoroughly and incubate at 4°C for 15 min.

Note: If a larger number of cells is being isolated, increase the amount of Releasable Magnetic Beads proportionally. If fewer than 1×10^7 cells are being isolated, adjust the cell suspension volume to 100 μ L, and add 2 μ L CD4 Capture Antibody and 20 μ L Releasable Magnetic Beads.

8. After incubation, add 2.5 mL Isolation Buffer to the flow cytometry tube. Gently pipette up and down 5 times to mix. Avoid vigorous shaking or repeatedly inverting the tube to mix. Place the flow cytometry tube containing the cells on a magnetic rack and allow it to stand for 5 min.

9. Discard the supernatant. Remove the flow cytometry tube from the magnetic rack and immediately add 2 mL Isolation Buffer. Gently pipette up and down several times to resuspend the magnetic beads. Place the flow cytometry tube back on the magnetic rack and allow it to stand for 5 min.

10. Repeat the above washing procedure twice.

Note: Thorough washing helps ensure a high purity of target cells during subsequent elution.

11. After magnetic separation, discard the supernatant. Remove the flow cytometry tube from the magnetic rack and immediately add 1 mL Magnetic Beads Release Buffer to resuspend the magnetic beads. Ensure that the magnetic beads do not dry out. Transfer the magnetic bead suspension to a 1.5 mL centrifuge tube and rotate-incubate at room temperature for 10 min.

Note: The volume of Magnetic Beads Release Buffer may be adjusted according to the number of cells being isolated. If fewer than 1×10^7 cells are being isolated, use 200 μ L Magnetic Beads Release Buffer for elution.

12. After incubation, pipette up and down at least 10 times. Transfer the magnetic bead suspension to a new flow cytometry tube and add Isolation Buffer to a total volume of 2.5 mL. Gently pipette up and down to mix. Place the flow cytometry tube on the magnetic rack and allow it to stand for 5 min.

13. The supernatant now contains the target cells. Transfer the supernatant to a 15 mL centrifuge tube and set aside. Immediately add 1 mL Magnetic Beads Release Buffer to the magnetic beads to resuspend them and prevent them from drying. Transfer the magnetic bead suspension to a 1.5 mL centrifuge tube and rotate-incubate at room temperature for 10 min.

14. Repeat the cell elution procedures (Step 12) once and retain the supernatant.

15. Combine the supernatant from the second elution with the supernatant from the first elution. Centrifuge at $500 \times g$ for 5 min and discard the supernatant to obtain CD4⁺ cells free of magnetic bead labeling.

16. Wash the cells according to the experimental requirements, then resuspend them in the required buffer or culture medium for subsequent molecular biology or cell biology experiments.

Storage Conditions

Store at 4°C for 2 years.

Precautions

1. Avoid freezing. Store beads in the solution to prevent drying.
2. Before removing beads from the tube, ensure they are evenly suspended by gentle shaking. Handle gently to avoid introducing bubbles.
3. It is recommended to use high-quality pipette tips and centrifuge tubes to avoid loss of beads due to adhesion.
4. This product is for scientific research use by professionals only and must not be used for clinical diagnosis or treatment, food or drug applications, and must not be stored in residential areas.
5. For your safety and health, wear lab coats and disposable gloves during operation.

Comparison of Negative and Positive Selection

Magnetic Cell Separation Technology	Negative Selection	Positive Selection
Samples	Diverse	Diverse
Capture	Magnetic beads binding to non-target cells	Magnetic beads binding to target cells
Is Detachment Required?	No	Yes
Antibody Labeling of Target Cells	No	Yes
Cell Activity	High	High
Features	High purity of target cells; No antibody or magnetic bead residue; Better cell viability, suitable for downstream functional experiments.	Broader sample range.

TargetMol US

✉ sales@targetmol.com ☎ (781) 999-4286 🌐 www.targetmol.com

📍 34 Washington Street, Suite 220, Wellesley Hills, MA 02481

TargetMol EU

✉ sales@targetmol.com ☎ +43(0)676/786025 🌐 www.targetmol.com

📍 Hafenstraße 47-51, 4020 Linz, Austria



LinkedIn



Facebook



PDF Documents