Immune Cell High-Efficiency Cryopreservation Medium

Product Manual

I. Product Introduction

The Immune Cell Cryopreservation Medium is a serum-free solution designed specifically for the cryopreservation of immune cells. This product minimizes cell damage during freezing, enhances post-thaw cell viability, and maintains the long-term functional characteristics of immune cells. The medium exhibits consistent batch-to-batch quality and has undergone safety evaluations as a cellular drug excipient, supporting IND approvals for cell therapies such as iNK (induced Natural Killer) cells.

II. Product Information

Table 1: Product Description of Immune Cell High-Efficiency Cryopreservation Medium

Product Information	Cat.No.	Amount
Immune Cell High-Efficiency Cryopreservation Medium	SN-06-1410	50mL

III. Storage Conditions

Storage temperature: 4℃

Shelf life: 12 months

IV. Cryopreservation of Immune Cells

1. Label the appropriate number of cryovials based on the cell count to be frozen.(Reference freezing density: NK cells: 1 × 109 cells/20 mL/vial; PBMC (Peripheral Blood Mononuclear Cells): 1~1.5 × 107 cells/mL/vial).
2. Collect cells in the logarithmic growth phase using standard methods and transfer them to centrifuge tubes.
3. Centrifuge the cells (reference conditions: 300 × g for 10 minutes).
4. Aspirate the supernatant and add the Immune Cell Cryopreservation Medium dropwise to the cell pellet. Mix gently to prepare a homogeneous cell suspension.
5. Aliquot the cell suspension into pre-labeled cryovials.
6. Perform controlled-rate freezing:
   (1) Place the cryovials in a pre-cooled (4°C) freezing container and transfer the container to a -80°C freezer. After 24 hours, move the cryovials to a liquid nitrogen tank for long-term storage (temperature ≤ -135°C).
   (2) Use a programmable freezer to cool the cell suspension at a rate of -1°C/min to -100°C (refer to the instrument manual). Immediately transfer the cryovials to a liquid nitrogen tank for long-term storage (temperature ≤ -135°C).

V. Thawing of Cryopreserved Cells (NK Cells as an Example)

1. Retrieve the cryovials from the liquid nitrogen tank and transport them on dry ice to the cell culture facility.
2. Thaw the cryovials rapidly in a 37°C water bath with gentle agitation.
3. Once the cell suspension is mostly thawed (with only small ice crystals remaining), remove the cryovial, disinfect it, and transfer the contents to a biosafety cabinet.

4. Resuspend the NK cells in an appropriate volume of complete culture medium. Seed the cells into culture vessels at the recommended density and add pre-warmed complete medium.(Note: For PBMC, wash the cells by centrifugation, remove the supernatant, resuspend in medium, and seed at a density of 1~2 × 106 cells/mL.)
5. Mix the cell suspension gently using a cross-shaking method and place the culture vessel in a 37°C incubator with 5% CO_2 and saturated humidity for further culture.

VI. Applications (NK Cells as an Example, Not Applicable to PBMC)

1. Retrieve the cryovials from the liquid nitrogen tank and transport them on dry ice to the cell culture facility.
2. Thaw the cryovials rapidly in a 37°C water bath with gentle agitation.
3. After thawing, transfer the cell suspension to an appropriate solution to prepare a working suspension. The recommended cell density is 2.5~10 × 107 cells/mL. Use the cells for research purposes as required.