Instruction Manual

Cell Freezing Medium

Description

TargetMol Cell Freezing Medium is a ready-to-use cryopreservation solution specifically designed for the long-term low-temperature storage of mammalian cells. This product employs an optimized combination of dimethyl sulfoxide (DMSO) and a serum-free, protein-free protective system, which effectively reduces ice crystal formation and prevents cell membrane damage and cell death without compromising cellular structure and function. As a result, post-thaw cell viability and physiological activity are significantly improved.

This product requires no additional preparation and is easy to use. It can be directly applied to the cryopreservation of both adherent and suspension cells, and is suitable for a wide range of cell types, including conventional cell lines, stem cells, primary cells, and transfected cells. No controlled-rate freezing procedure is required; cells can be directly stored at −80 °C.

Whether for routine cell banking or long-term storage of experimental samples, TargetMol Cell Freezing Medium provides stable and reliable protection, making it an ideal choice for high-quality preservation of cell resources.

Features

Ready-to-use formulation: Can be used directly without additional preparation, significantly simplifying the cryopreservation workflow.

High post-thaw viability: The optimized ratio of DMSO and protective components effectively reduces ice crystal formation and improves cell survival after freeze–thaw cycles.

Broad applicability: Suitable for various mammalian cells, including adherent cells, suspension cells, stem cells, and primary cells.

Excellent preservation of cell status: Cells exhibit rapid recovery of morphology, proliferation capacity, and function after thawing, ensuring high experimental reproducibility.

Compatible with multiple cryopreservation conditions: Can be used in conjunction with controlled-rate freezing containers, programmable freezing systems, or manual cooling methods.

Applications

Suitable for long-term cryopreservation of various mammalian cells, ensuring high viability and stability after freezing and thawing.

Instructions

I. **Cell Cryopreservation Procedure:**

1. Cell Collection

Select cells in good condition and in the logarithmic growth phase.

For adherent cells, detach with trypsin and collect by centrifugation.

For suspension cells, collect directly by centrifugation.

Recommended centrifugation conditions: 1000 rpm for 5 min.

2. Cell Resuspension

Discard the supernatant and gently resuspend the cells in the cell freezing medium.

A recommended cell density is 1×10^6–1×10^7 cells/mL per vial.

3. Aliquoting

Dispense the cell suspension into sterile cryovials, approximately 1 mL per vial.

4. Controlled-Rate Freezing

Place the cryovials into a controlled-rate freezing container and cool at a rate of approximately −1 °C/min to −80 °C. Store at this temperature overnight.

5. Long-term Storage

Transfer the cryovials to liquid nitrogen (−196 °C) for long-term storage on the following day.

II. Cell Thawing Procedure:

1. Rapid Thawing

Remove the cryovial from liquid nitrogen and immediately place it in a 37 °C water bath. Gently agitate to thaw rapidly within 1–2 min.

2. Dilution and Removal of Cryoprotectant

Slowly add the thawed cell suspension into pre-warmed complete culture medium (~10 mL) while gently mixing.

3. Centrifugation

Centrifuge at 1000 rpm for 5 min, discard the supernatant, and resuspend the cells in fresh culture medium.

4. Recovery Culture

Seed the cells into appropriate culture dishes or flasks and incubate at 37 °C in a 5% CO_2 incubator.

It is recommended to replace the culture medium after 24 h to remove residual cryoprotectant.

Storage

Stable for 3 months at 4 °C and for 1 year at −20 °C.

Precautions

1. The freezing medium should be aliquoted for storage to avoid repeated freeze–thaw cycles, which may affect component stability and protective performance.
2. It is recommended to pre-cool the freezing medium at 4 °C before use to minimize cellular stress caused by temperature fluctuations.
3. All procedures should be performed under sterile conditions to prevent microbial contamination.
4. Ensure that cells are in good condition prior to cryopreservation, in the logarithmic growth phase, with a viability of no less than 90%.
5. Cells can be stored long-term in liquid nitrogen; if stored at −80 °C, they remain stable for approximately 1 year.
6. The product is for R&D use only, not for diagnostic procedures, food, drug, household or other uses.
7. Please wear a lab coat and disposable gloves.