

User Manual

OriCell™ Cryopreservation

Medium For iPSC

Catalog No. GPSC-10001



Introduction

Cell cryopreservation refers to placing cells in a low-temperature environment for long-term storage. Through years of extensive research, the OriCell™ R&D team has continuously optimized cell cryopreservation and recovery conditions to develop a range of cryopreservation products suitable for a wide variety of cell types.

OriCell™ Cryopreservation Medium For iPSC significantly reduces the damage of ice crystals to cells during cryopreservation, effectively improving cell recovery rates and viability. Extensive validation data demonstrate that this product causes minimal cellular damage, ensuring high post-thaw recovery rates and optimal cell viability.

OriCell™ Cryopreservation Medium For iPSC is suitable for most commonly used iPSCs (induced pluripotent stem cells). Post-thaw viability may vary depending on the cell type.

Note: This product is intended for research use only and is not for diagnostic, therapeutic, clinical, household, or any other applications.

When citing our products in academic publications, please use the following format: “OriCell™ [Product Name] + [Catalog Number], from Cyagen Biosciences.”

Product Advantages

- Stable performance and simple operation.
- Achieves up to 80% post-thaw viability across most iPSCs.
- Effectively preserves the multipotent differentiation potential of iPSCs post-thaw.

QC

- Pass the detection of bacteria, fungi, mycoplasma, and endotoxins.
- Pass the detection of osmotic pressure and pH.
- Pass the detection of product quality.

Please refer to "COA" for details.

General Handling Principles

1. Maintain strict aseptic technique. Ensure the entire lab and operating areas are kept clean.
2. Follow standardized protocols. Adhere strictly to the instructions provided in the manual.
3. Ensure proper storage and use. Store the product according to specified conditions and use it promptly to ensure optimal performance.

Product Stability and Storage Conditions

- The product has a shelf life of 1 year when stored at 4 °C and protected from light.
- Use the product within the shelf life. Do not use it after the expiration date.

Cell Cryopreservation

Materials Required

- OriCell™ Cryopreservation Medium For iPSC (Cat. No.: GPSC-10001)
- OriCell™ Dissociation Solution For iPSC (Cat. No.: PPFD-10001)
- Clean, sterile and high-quality disposable consumables (pipettes, pipette tips, centrifuge tubes, etc.)
- Clean sealing film

Steps

1. When cells reach approximately 80% confluency, they are ready for dissociation.
Note: Please refer to the product manual of OriCell™ Dissociation Solution For iPSC (Cat. No.: PPFD-10001) for detailed instructions.
2. After terminating the dissociation, collect and centrifuge the cells. Resuspend the cell pellet in the cryopreservation medium (Cat. No.: GPSC-10001).
3. After performing a cell count, aliquot the cell suspension into pre-labeled cryovials.
4. Place the cryovials in a controlled-rate freezing container and store at -80 °C. After 24 hours, transfer the vials to liquid nitrogen for long-term storage.

Cell Recovery

Materials Required

- OriCell™ Vitronectin Solution (Cat. No.: VTNS-10001)
- Clean, sterile and high-quality disposable consumables (pipettes, pipette tips, centrifuge tubes, etc.)

Steps

1. Pre-warm the water bath to 37 °C.
2. Bring the iPSC complete medium to room temperature before use.
3. Transfer the cells from liquid nitrogen to -80 °C and hold them there for 10 minutes. This will allow any residual liquid nitrogen to evaporate and prevent vial explosion.
4. Add at least 8 mL of complete medium to a 15 mL centrifuge tube for subsequent use.
5. Remove the cryovial containing cells from the -80 °C freezer, immerse it in the 37 °C water bath, and gently and quickly swirl to thaw the cryopreservation medium.

Note:

- (1) Gently swirl the cryovial during thawing to ensure rapid and uniform thawing.
 - (2) Avoid submerging the cap in water to prevent contamination.
 - (3) Stop thawing in the water bath when only a single ice crystal (approximately 2 mm in diameter) remains, then continue gently swirling the vial until it is completely thawed.
6. Once the cell suspension is completely thawed, wipe the outer surface of the cryovial with 75% ethanol.
 7. In a biosafety cabinet, open the cryovial and transfer the cell suspension to the prepared centrifuge tube using a Pasteur pipette.
 8. Rinse the cryovial once with 1 mL of complete medium to collect residual cells and minimize loss.
 9. Centrifuge the cell suspension at $160 \times g$ for 5 minutes.

Note: Please calculate the corresponding rotational speed using the formula: $RCF = 1.118 \times 10^{-5} \times r \times RPM^2$ (where RCF is the relative centrifugal force, r is the rotor radius in cm, and RPM is the rotational speed).

10. Carefully remove the supernatant after centrifugation. Add 2 mL of complete medium, gently resuspend the cell pellet by pipetting up and down to mix thoroughly.
11. Seed the cells into a Vitronectin-coated culture vessel, and gently rock the vessel to ensure even distribution.
12. Examine the cells under a microscope, then incubate at 37 °C with 5% CO₂ and saturated humidity.

Cyagen Biosciences (Suzhou) Inc. reserves all rights to the technical documents of OriCell™ cell culture products. Without the written permission of Cyagen Biosciences (Suzhou) Inc. any part of this document shall not be adapted or reprinted for other commercial purposes.