



Cryopreservation of Stem Cells

The capacity to freeze, store and thaw cell lines is a necessity for every mammalian cell culture laboratory. REPROCELL offers multiple products for cell and stem cell cryopreservation. Whether you work in basic research or clinical labs, prefer slow-freeze or quick-freeze methods, REPROCELL has a cryopreservation medium to meet your needs.

Features and Formulations

Recently, chemically-defined cell freezing medium has become the standard. Most classic formulations of cryopreservation medium containing dimethyl sulfoxide (DMSO) as the active cryoprotection agent. However, since it is known that DMSO is a mutagen and carcinogen, DMSO-free formulations are becoming popular for stem cell applications. This is an especially critical consideration for cells being used in translational research or clinical applications. Moreover, media formulations that are manufactured under GMP compliance and have drug-master files registered with government regulatory agencies provide added value for regenerative medicine use.

Regenerative Medicine Qualified

ReproCryo™ RM Medium (cat. no. RCHEFM004)

ReproCryo RM is an advanced formulation for the cryo-preservation of human induced pluripotent stem cell (iPSC) lines. Specifically formulated for regenerative medicine (RM) applications, the medium does not contain any DMSO or phenol red, and displays no toxicity in animal drug safety testing. ReproCryo RM's proprietary formulation conforms with the Standards for Biological Materials Safety (Japan), is manufactured under cGMP compliance and has a drug-master-file with the Japan PMDA (#229MF40016).

ReproCryo RM Medium has only been validated for use on human iPSC cells. The formulation is slightly different than research grade ReproCryo DMSO-free RM Medium (RCHEFM003). ReproCryo RM medium is recommended for use in combination with ReproMed™ iPSC Medium (cat. no. RCRM101). Both products are from REPROCELL Medical, and comply with international standards required to hasten cell therapy product approvals with regulatory authorities.

CLINICAL RESEARCH





| Product Name | Cat. No. | Quantity | DMSO | Phenol-Red | Xeno-Free | Stem / iPPSC | Other Cells | GMP Mfg. | Drug Master File | Freezing Method |
|--|------------|----------|------|------------|-----------|--------------|-------------|----------|------------------|-----------------|
| ReproCryo™ RM Medium | RCHEFM004 | 50 mL | | | ✓ | ✓ | | ✓ | ✓ | SLOW |
| ReproCryo™ DMSO-free RM Medium | RCHEFM003 | 50 mL | | | ✓ | ✓ | | | | SLOW |
| CryoStem™ Freezing Medium | 01-0013-50 | 50 mL | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | SLOW |
| Freezing Medium for Human ES/iPS Cells | RCHEFM001 | 25 mL | | | ✓ | ✓ | | | | RAPID |

ReproCryo™ DMSO-free RM Medium (cat. no. RCHEFM003)

ReproCryo DMSO-free RM Medium is optimized for the cryo-preservation of human iPS cells. It does not contain DMSO, which is a known mutagen and carcinogen. The medium is completely xeno-free and is formulated without phenol red. ReproCryo DMSO-free RM Medium has been extensively validated for maintenance of pluripotency on multiple iPSC lines. The product has not been extensively tested on other cell types.

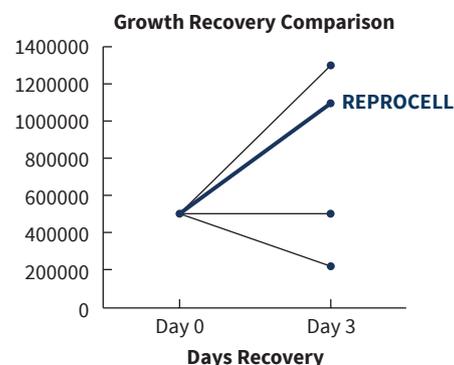


Figure 1. iPS cells cryopreserved in ReproCryo DMSO-free RM Medium show rapid growth kinetics upon recovery in cell culture medium.

Freezing Medium for Human ES/iPS Cells (cat. no. RCHEFM001)

Freezing Medium for Human ES/iPS Cells is a cryo-preservation medium formulated for rapid freezing of stem cells using the vitrification (rapid super cooling) method. The medium contains a low percentage of acetamide as a cryoprotectant and no serum. Compared to DMSO-containing formulations, Freezing Medium for Human ES/iPS Cells displays high recovery efficiency for stem cells relative to many other vitrification methods. Freezing Medium for human ES/iPS cells can be used on stem cells cultured as feeder-dependent or under feeder-free conditions. The medium was developed in the lab of Prof. Norio Nakatsuji at Kyoto University.



Related Products

| Product Name | Quantity | Cat. No. |
|---|------------|-------------|
| Dissociation Solution | 30 mL | RCHETP002 |
| Human ES Cell Cloning & Recovery Supplement | 5 × 100 µL | 01-0014-500 |
| ReproMed™ iPSC Medium | 500 mL | RCRM101 |
| NutriStem™ Human PSC XF Media | 500 mL | 01-0005-500 |
| StemFit™ Basic 02 Cell Culture Medium | 500 mL | ASB01 |
| iMatrix-511 Stem Cell Culture Substrate | 6 × 175 µg | NP892-012 |

CryoStem™ Freezing Medium (cat. no. 01-0013-50)

CryoStem Freezing Medium is a chemically defined, protein-free, ready-to-use formulation for the cryo-preservation of human cells. CryoStem Freezing Medium has been validated on several human ES cell lines (H1, H9, HuES9, other). It contains methylcellulose and DMSO in place of serum or other animal components and provides high recovery efficiency, maintaining pluripotency and good growth performance when used for either feed-based or feeder-free cultures. CryoStem Freezing Medium has also been validated for freezing of human mesenchymal stem cells and numerous other human cell types (see reference list on website). CryoStem is manufactured under cGMP compliance by Biological Industries, Inc.



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