

STEM-CELLBANKER® GMP Grade (Chemically defined cryopreservation solution)

****For Research Use Only****

Manufactured By

ZENOGEN PHARMA CO., LTD.

****FDA DMF Registered****

Cat#: 11924 (100mL), 11922 (20mL)
Storage Temperature: 2 to 8°C or below -20°C.
Expiry Date: 3 years from manufacturing date (see label)
Manufactured By: Zenogen Pharma Co., Ltd



Protocol:

Freezing

For optimum results, cells for cryopreservation should be in log phase of growth. Similar or other standard freezing protocols may be substituted.

1. Examine and make sure the cell culture is free of contamination, in healthy and at proper confluency.
2. Perform a cell count to determine the viability of cells.
3. Centrifuge at 1,000 - 2,000 rpm, 4°C for 3 to 5 minutes to gently pellet the cells. Remove the supernatant with an aspirator.
4. Gently suspend STEM-CELLBANKER® cryopreservation medium (1 mL for 5×10^5 - 5×10^6 cells).
5. Transfer 1 mL of the cell suspension to cryopreservation vial labeled with appropriate information (the cell line name, concentration, passage date etc.).
6. Place the vials directly in -80°C for storage.
7. **(OPTIONAL)** Transfer the frozen vials to a liquid nitrogen storage tank after the vials have been frozen for at least 24 hours.

IMPORTANT: Optimum protocol may change with the cell types.

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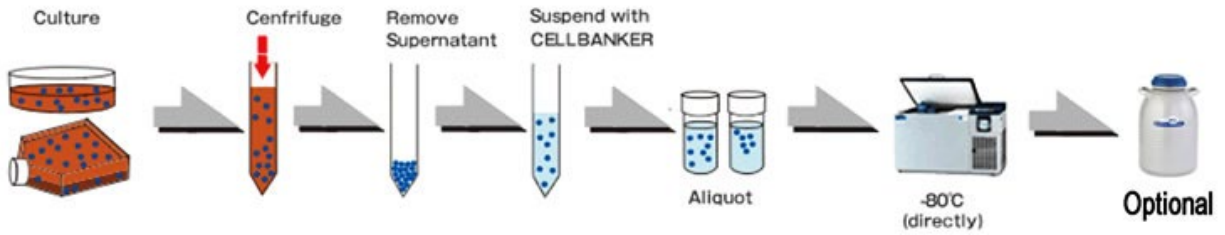
Iwai North America Inc.

URL: www.iwaichem.com

Email: orders@iwai-chem.com

Tel: 650-486-1541

Procedure for Use:



Thawing

1. Remove the cryopreservation vial from the freezer and quickly thaw cells in a 37°C shaking water bath or shake by hand.
2. Transfer the content to a centrifugation tube then immediately dilute and gently mix with 10mL of complete cell culture medium. **Using CELLOTION® instead of complete culture medium will prevent adhesion of cells to the wall of the tube, increasing the recovery rate.**
3. Centrifuge cells at 1,000 - 2,000 rpm, 4°C for 3 to 5 minutes. Remove the supernatant with an aspirator.
4. Gently resuspend the cells with appropriate volume of complete cell culture medium then plate in a culture flask or plate.
5. Continue the culture procedures according to standard protocols.

Cells Tested (Check website for updated list)

Cell Type	Description
HS293	Human embryonic stem cell
HS306	Human embryonic stem cell
ChiPSA	Human iPS Human UCB-derived MSCs Human dental pulp stem cell Human endothelial Progenitor Cells (EPCs) Human iPSC-derived cardiomyocyte Human iPSC-derived neural stem cell Human gastric cancer stem cell Dog dental pulp stem cell
129SV	Mouse embryonic stem cell
Tissue	Umbilical cord tissue Thymic tissue Mouse kidney tissue
Organoids	Bronchial organoid Intestinal organoid Lung cancer organoid

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FDA Master File:

This product is registered with FDA Drug Master File. Please contact us at orders@iwai-chem.com or fill out the form online.

References:

Holm, F. et al. An effective serum- and xeno-free chemically defined freezing procedure for human embryonic and induced pluripotent stem cells. *Human Reproduction* 25, 1271–1279 (2010) doi: 10.1093/humrep/deq040.

Osaki, T., Uzel, S. G. M. & Kamm, R. D. On-chip 3D neuromuscular model for drug screening and precision medicine in neuromuscular disease. *Nature Protocols* 15, 421–449 (2020) doi: 10.1038/s41596-019-0248-1.

Doi, D. et al. Pre-clinical study of induced pluripotent stem cell-derived dopaminergic progenitor cells for Parkinson's disease. *Nature Communications* 11, 3369 (2020) doi: 10.1038/s41467-020-17165-w.

Mae, S.-I. et al. Expansion of Human iPSC-Derived Ureteric Bud Organoids with Repeated Branching Potential. *Cell Reports* 32, (2020) doi: 10.1016/j.celrep.2020.107963.

Drummond, N. J. et al. Cryopreservation of midbrain dopaminergic neural cells differentiated from human embryonic stem cells. *bioRxiv* 2020.02.11.944272 (2020) doi: 10.1101/2020.02.11.944272.

Ballantyne, M. et al. Direct allele introgression into pure chicken breeds using Sire Dam Surrogate (SDS) mating. *Nature Communications* 12, 659 (2021) doi: 10.1038/s41467-020-20812-x.

Piao, J. et al. Preclinical Efficacy and Safety of a Human Embryonic Stem Cell-Derived Midbrain Dopamine Progenitor Product, MSK-DA01. *Cell Stem Cell* 28, 217-229.e7 (2021) doi: 10.1016/j.stem.2021.01.004.

Disclaimer:

STEM-CELLBANKER® GMP grade is not itself a pharmaceutical. Therefore, no warranty, express or implied, as to the fitness and suitability of this product for any particular purpose and/or merchantability unless the use is intended for research.

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