Rev. 0

Mouse Pituitary Cells (MPC)

Catalog #M1220-57

Cell Specification

Located at the base of the brain, the pea-sized pituitary gland is critical for regulating growth, development, and the function of target organs and other endocrine glands. The process of pituitary development serves as a prime example of cell specification. The anterior pituitary is comprised of six major cell types responsible for secreting eight distinct hormones: growth hormone, prolactin, thyrotrophin stimulating hormone, adrenocorticotrophic hormone, leutinizing hormone, follicle stimulating hormone, melanocyte stimulating hormone, and endorphin, which are distributed within specific glandular regions. Research has shown that many pituitary cell types express natriuretic peptide receptors and are responsive to natriuretic peptides, leading to cGMP accumulation [1]. Mouse Pituitary Cells (MPC) provide a valuable model for enhancing our understanding of pituitary gland diseases.

MPC from ScienCell Research Laboratories are isolated from postnatal day 8 C57BL/6 mouse pituitary. MPC are cryopreserved at P0 and delivered frozen. Each vial contains >5 x 10^5 cells in 1 ml volume. MPC are negative for mycoplasma, bacteria, yeast and fungi. MPC are guaranteed to further culture in the conditions provided by ScienCell Research Laboratories; however, *MPC are not recommended for expanding or long-term cultures due to limited expansion capacity*.

Recommended Medium

It is recommended to use Epithelial Cell Medium (EpiCM, Cat. #4101) for the culturing of MPC *in vitro*.

Product Use

MPC are for research use only. They are not approved for human or animal use, or for application in *in vitro* diagnostic procedures.

Storage

Upon receiving, directly and immediately transfer the cells from dry ice to liquid nitrogen and keep the cells in liquid nitrogen until they are needed for experiments.

Shipping

Dry ice.

References

[1] Fowkes, R, Forrest-Owen, W, and McArdle, C. (2000) "C-type natriuretic peptide (CNP) effects in anterior pituitary cell lines: evidence for homologous desensitisation of CNP-stimulated cGMP accumulation in alpha T3-1 gonadotroph-derived cells. *J Endocrinol.* 166: 195–203.

Instructions for culturing cells

Caution: Cryopreserved primary cells are very delicate. Thaw the vial in a 37ºC water bath and return the cells to culture as quickly as possible with minimal handling! Do not centrifuge the cells after thawing as this can damage the cells.

Note: Experiments should be well organized before thawing the cells. It is recommended that MPC are used for experiments directly after plating with only minimal expansion. We do not recommend subculturing the cells.

Note: ScienCell primary cells must be cultured in a 37ºC, 5% CO_2 incubator. Cells are only warranted if ScienCell media and reagents are used and the recommended protocols are followed.

1. Prepare a poly-$_L$-lysine-coated culture vessel (2 µg/cm^2, T-75 flask is recommended). To obtain a 2 µg/cm^2 poly-$_L$-lysine-coated culture vessel, add 10 ml of sterile water to a T-75 flask and then add 15 µl of poly-$_L$-lysine stock solution (10 mg/ml, Cat. #0413). Leave the vessel in a 37ºC incubator overnight (or for a minimum of one hour).
2. Prepare complete medium. Decontaminate the external surfaces of medium bottle and medium supplement tubes with 70% ethanol and transfer them to a sterile field. Aseptically transfer supplement to the basal medium with a pipette. Rinse the supplement tube with medium to recover the entire volume.
3. Rinse the poly-$_L$-lysine-coated vessel twice with sterile water and then add 20 ml of complete medium. Leave the vessel in the sterile field and proceed to thaw the cryopreserved cells.
4. Place the frozen vial in a 37ºC water bath. Hold and rotate the vial gently until the contents completely thaw. Promptly remove the vial from the water bath, wipe it down with 70% ethanol, and transfer it to the sterile field.
5. Carefully remove the cap without touching the interior threads. Gently resuspend and dispense the contents of the vial into the equilibrated, poly-$_L$-lysine-coated culture vessel. A seeding density of 6,000-8,000 cells/cm^2 is recommended.

   Note: Dilution and centrifugation of cells after thawing are not recommended since these actions are more harmful to the cells than the effect of residual DMSO in the culture. It is also important that cells are plated in poly-$_L$-lysine-coated culture vessels to promote cell attachment.
6. Replace the cap or lid of the culture vessel and gently rock the vessel to distribute the cells evenly. Loosen cap, if necessary, to allow gas exchange.
7. Return the culture vessel to the incubator.
8. Do not disturb the culture for at least 16 hours after initiation. Refresh culture medium the next day to remove residual DMSO and unattached cells.

Maintaining the culture:

1. Change the medium every three days, until the culture is approximately 70% confluent.
2. Once the culture reaches 70% confluency, change medium every other day until the culture is approximately 90% confluent.
3. Use cells promptly for experiments.

   Note: We do not recommend cryopreservation of primary cells by the end user. Refreezing cells may damage them and affect cell performance. ScienCell does not guarantee primary cells cryopreserved by the end user.

Caution: Handling animal-derived products is potentially biohazardous. Always wear gloves and safety glasses when working with these materials. Never mouth pipette. We recommend following the universal procedures for handling products of human origin as the minimum precaution against contamination [1].

[1] Grizzle WE, Polt S. (1988) "Guidelines to avoid personal contamination by infective agents in research laboratories that use human tissues." *J Tissue Cult Methods*. 11: 191-9.