Rat Pituitary Cells (RPC)

Catalog #R1220 (*Formerly known as #R1200*)

Cell Specification

The pituitary is a small, pea-sized gland located at the base of the brain. It is responsible for controlling and coordinating: 1) growth and development, 2) the function of various body organs, and 3) the function of other glandular organs. The study of pituitary gland development provides a remarkable example of cell specification. There are six major cell types of the anterior (endocrine) pituitary, and eight hormones: growth hormone, prolactin, thyrotrophin stimulating hormone, adrenocorticotrophic hormone, leutinizing hormone, follicle stimulating hormone, melanocyte stimulating hormone, and endorphin are produced by different pituitary cells, which are located in specific regions of the pituitary gland. Many pituitary cell types have been shown to express natriuretic peptide receptors and to respond to natriuretic peptides to stimulate cGMP accumulation [1].

RPC from ScienCell Research Laboratories are isolated from neonatal day 8 rats. RPC are cryopreserved after purification and delivered frozen. Each vial contains >5 x 10^5 cells in 1 ml volume. RPC are negative for mycoplasma, bacteria, yeast and fungi. RPC are guaranteed to further culture in the conditions provided by ScienCell Research Laboratories; however, *RPC 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 RPC *in vitro*.

Product Use

RPC 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 cells are very delicate. Thaw the vial in a 37°C water bath and return them to culture as quickly as possible with minimal handling!

Note: Experiments should be well organized before thawing RPC. It is recommended that RPC are used for experiments as quickly as possible after thawing the cells.

Initiating the culture:

1. Prepare a poly-L-lysine coated flask (2 μg/cm^2, T-75 flask is recommended). 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, ScienCell Cat. #0413). Leave the vessel in a 37°C incubator overnight (or for a minimum of one hour). *Note: It is important that these cells are plated in poly-L-lysine-coated culture vessels to promote cell attachment.*
2. Prepare complete medium. Decontaminate the external surfaces of medium bottle and medium supplements tubes with 70% ethanol and transfer them to 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 15 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 37°C 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. Carefully remove the cap without touching the interior threads.
5. Gently resuspend and dispense the contents of the vial into the 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.
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. For best result, do not disturb the culture for at least 16 hours after the culture has been initiated. Refresh culture medium the next day to remove the residual DMSO and unattached cells.

Maintaining the culture:

1. Refresh supplemented culture medium the next morning after establishing a culture from cryopreserved cells.

2. Change the medium every third day thereafter, until the culture is approximately 50% confluent.
3. Once the culture reaches 50% confluence, change medium every day until the culture is approximately 90% confluent.
4. Use cells promptly for experiments.

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.