Human Hippocampal Neurons (HHN)

Catalog Number: 1540

Cell Specification

The tissue of the central nervous system is made up of two classes of cells that may be broadly categorized as neurons and glia. Neurons are anatomic, functional, and trophic units of the brain [1]. Despite great variability in size and shape, all neurons share common morphologic features, which are those of the key elements of a highly complex communication network. The neurons are the dynamically polarized cells that serve as the major signaling unit of the nervous system. The human brain is known to contain about 1 x 10^{11} neurons, each being able to contact at least 10,000 other neurons [2]. The hippocampal neurons play a special role in learning and memory and cultured hippocampal neurons are a useful model for studying neuronal phenomena such as differentiation, survival, process growth, and synapto-genesis.

HHN from ScienCell Research Laboratories are isolated from hippocampal tissue of the brain. HHN are cryopreserved at secondary cultures and delivered frozen. Each vial contains >1 x 10^{6} cells in 1 ml volume. HHN are characterized by immunofluorescent method with antibodies to neurafilament, MAP2, and beta-tubulin III. HHN are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast and fungi. HHN are guaranteed to further culture in the conditions provided by ScienCell Research Laboratories.

Recommended Medium

It is recommended to use neuronal medium (NM, Cat. No. 1521) for the culture of human neurons i*n vitro*.

Product Use

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

Storage

Transfer cells directly and immediately from dry ice to liquid nitrogen upon receiving and keep the cells in liquid nitrogen until cell culture is needed for experiments.

Shipping

Dry ice.

Reference

[1] Parent, A. (1996) Neurons in Carpenter's Human Neuroanatomy. 9th ed., pp131-198, Williams & Wilkins, Quebec, Canada.

[2] Alberts, B., Bray, D., Lewis, J., Raff, M., Roberts, M., Watson, J. D. (1989) Molecular biology of the cell. 2nd. ed., New York: Garland.

Instruction for culturing cells

Caution: Cryopreserved cells are very delicate. Thaw the vial in a 37^{o}C waterbath and return them to culture as quickly as possible with minimal handling!

Set up culture after receiving the ordering:

1. Place the vial in a 37^{o}C waterbath, hold and rotate the vial gently until the contents are completely thawed. Remove the vial from the waterbath immediately, wipe it dry, and transfer it to a sterile field. Rinse the vial with 70% ethanol, and then wipe to remove excess. Remove the cap, being careful not to touch the interior threads with fingers.

2. Using 1 ml eppendorf pipette gently reused the contents of the vial and transfer the cells to a 15 ml conical centrifuge tube which contains 10 ml of complete NM (medium contains neuronal growth supplement). Centrifuge the tube at 1000 rpm for 5 min.

3. Discard the supernatant, gently reused the cells in complete NM, and dispense the cell suspension into the equilibrated culture vessels (a T-25 flask). A high seeding density (>10,000/cm^2) is recommended.

Note: It is important that neurons are plated in laminin, collagen, or poly-L-lysine coated culture vessels that promote cell attachment and neurites outgrowth (Poly-L-lysine coating: coat flask or plate with Poly-L-lysine at 2 µg/ml concentration for one hour and wash the flask or plate with sterile water three times).

4. Replace the cap or cover, and gently rock the vessel to distribute the cells evenly. Loosen caps if necessary to permit gas exchange. Return the culture vessels to the incubator.

5. Change medium every other day. A health culture will display normal neuron morphology, and nonvacuole cytoplasm with multiple processes.

Caution: Handling human derived products is potentially bioharzadous. Although each cell strain testes negative for HIV, HBV and HCV DNA, proper precautions mush be taken to avoid inadvertent exposure. Always wear gloves and safety glasses when working 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, W. E., and Polt, S. S. (1988) Guidelines to avoid personal contamination by infective agents in research laboratories that use human tissues. J Tissue Culture Methods. 11(4).