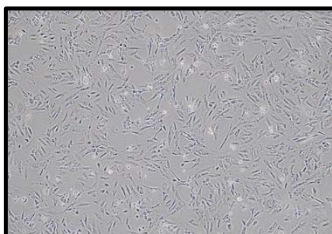


OCULAR CELL SYSTEM INNOPROFILE™ IMMORTALIZED HUMAN CORNEAL EPITHELIAL CELLS



Product Type: Immortalized Human Corneal Epithelial Cells

Catalog Number: P10871-IM

Number of cells: > 1 x10⁶ cells in Cryopreserved vials

Storage: Liquid Nitrogen

The Immortalized Human Corneal Epithelial cell line is derived from Primary Human Corneal Epithelial Cells (>99% purity) and have maintained epithelial specific markers such as CK18 and CK19 but also tight junction proteins, such as ZO-1. These cells are suitable for studies of human cornea in health and disease.

The cornea is a unique tissue for two reasons, the transparency function and the synthesis of most of its proteins because the cornea is an avascular tissue. The corneal epithelium plays a role in the innate immune response by sensing the presence of pathogens and providing signals that activate the corneal defense system. Corneal epithelial basal cell proliferation is controlled by a host of cytokines, e.g., epidermal growth factor, that activate their cognate receptors in the deeper layers of the epithelium. Instead of testing products in the eyes of animals, cultured corneal epithelial cells could be used for toxicology tests in in vitro models and for studying the molecular mechanisms involved in regulating human corneal epithelial cell differentiation.

Culture Medium Recommended

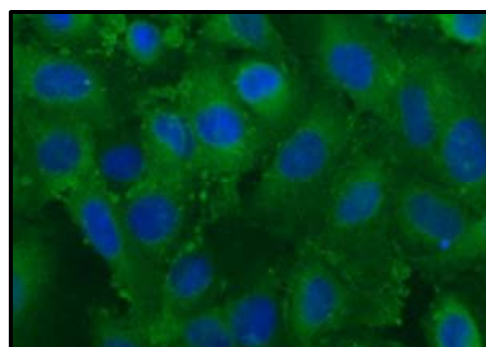
- IM-Ocular Epithelial Cell Medium (Ref. P60189)

Product Characterization

Positive for:

- CK-18
- CK-19
- ZO-1

The cells test negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast and fungi



Product Use

Sale of this item is subjected to the completion of a Material Transfer Agreement (MTA) by the purchasing individual/institution for each order. If you have any questions regarding this, please contact us at innoprot@innoprot.com

INSTRUCTIONS FOR CULTURING CELLS

IMPORTANT: Cryopreserved cells are very delicate. Thaw the vial in a 37 °C waterbath and return them to culture as quickly as possible with minimal handling!

Set up culture after receiving the order:

1. Prepare a type I collagen coated flask or use a pre-coated flask with type I collagen (T-75 flask is recommended).
2. Prepare complete medium: decontaminate the external surfaces of medium and medium supplements with 70% ethanol and transfer them to sterile field. Aseptically open each supplement tube and add them to the basal medium with a pipette. Rinse each tube with medium to recover the entire volume.
3. Rinse the collagen coated flask with sterile water twice and add 20 ml of complete medium to the flask. Leave the flask in the hood and go to thaw the cells.
4. Place the vial in a 37°C waterbath, hold and rotate the vial gently until the contents are completely thawed. Remove the vial from the waterbath immediately, wipe it dry, rinse the vial with 70% ethanol and transfer it to a sterile field. Remove the cap, being careful not to touch the interior threads with fingers. Using a 1 ml eppendorf pipette gently re-suspend the contents of the vial.
5. Dispense the contents of the vial into the equilibrated, collagen coated culture vessels. A minimum seeding density of 10,000 cells/cm² 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 DMSO residue in the culture.

It is also important that HConEC are plated in collagen coated flask that promotes cell attachment and growth.

6. Replace the cap or cover, and gently rock the vessel to distribute the cells evenly. Loosen cap if necessary to permit gas exchange.
7. Return the culture vessels to the incubator.
8. For best result, do not disturb the culture for at least 16 hours after the culture has been initiated. Change the growth medium the next day to remove the residual DMSO and unattached cells, then every other day thereafter. A health culture will display polygonal shaped, sheets of contiguous cells and the cell number will be double after two to three days in culture

Maintenance of Culture:

1. Change the medium to fresh supplemented medium the next morning after establishing a culture from cryopreserved cells.
2. Change the medium every three days thereafter, until the culture is approximately 70% confluent.
3. Once the culture reaches 70% confluence, change medium every other day until the culture is approximately 90% confluent.

Subculture:

1. Subculture the cells when they are over 90% confluent.
2. Prepare collagen type I coated cell culture flask.
3. Warm medium, trypsin/EDTA solution (T/E), trypsin neutralization solution (TNS), and DPBS (Ca⁺⁺ and Mg⁺⁺ free) to room temperature. We do not recommend warming the reagents and medium at 37°C waterbath prior to use.
4. Rinse the cells with DPBS.
5. Add 5 ml of DPBS first and then 5 ml of trypsin/EDTA solution into flask (in the case of T-75 flask); gently rock the flask to make sure cells are covered by trypsin/EDTA solution; incubate the flask at 37°C incubator for 3 to 5 minutes or until cells are completely rounded up (monitored with inverted microscope). During incubation, prepare a 50 ml conical centrifuge tube with 5 ml of fetal bovine serum (FBS, cat. no. 0500); transfer trypsin/EDTA solution from the flask to the 50 ml centrifuge tube (a few percent of cells may detached); continue incubate the flask at 37°C for 1 or 2 minutes more (no solution in the flask at this moment); at the end of trypsinisation, one hand hold one side of flask and the other hand gently tap the other side of the flask to detach cells from attachment; check the flask under inverted microscope to make sure all cells are detached, add 5 ml of trypsin neutralization solution to the flask and transfer detached cells to the 50 ml centrifuge tube; add another 5 ml of TNS to harvest the residue cells and transfer it to the 50 ml centrifuge tube. Examine the flask under inverted microscope to make sure the cell harvesting is successful by looking at the number of cells left behind. There should be less than 5%.
6. Centrifuge the 50 ml centrifuge tube (harvested cell suspension) at 1000 rpm (Beckman Coulter Allegra 6R centrifuge or similar) for 5 min; re-suspend cells in growth medium.
7. Count cells and plate cells in a new, collagen coated flask with cell density as recommended.

Caution: Handling human derived products is potentially biohazardous. Although each cell strain testes negative for HIV, HBV and HCV DNA, diagnostic tests are not necessarily 100% accurate, therefore, proper precautions must 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).