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Product Information

Human Meningeal Cells (HMC)

Catalog Number	10HU-168	Cell Number	0.5x 10^6 cells/vial
Species	*Homo sapiens*	Storage Temperature	Liquid Nitrogen

Description

Meningeal cells surround the brain and actively participate in the development of the central nervous system. They play an important role in stabilizing the extracellular matrix of the pial surface, organizing the radial glial scaffold, and laminating the cerebellar cortex [1]. Selective pharmacological destruction of the meningeal cells during a critical ontogenetic period leads to specific malformation of both the cerebellar cortex and dentate gyrus [1]. Grafts of meningeal cells, which are derived from meninges overlying the cerebral cortex, in adult rat spinal cord lesions promotes axonal regrowth [2]. Additionally, in vitro studies showed that meningeal cells chemotactically orient the migration of immature neurons but not glial cells [3].

Human Meningeal Cells (HMC) from iXCells Biotechnologies are isolated from human leptomeninges. HMC are cryopreserved at P0 and delivered frozen. Each vial contains >5 x 10^5 cells in 1 ml volume. HMC are characterized by immunofluorescence; they are positive for fibronectin and negative for GFAP, α-smooth muscle actin, and Thy 1.1. HMC are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi. HMC are guaranteed to further expand in Meningeal Cell Growth Medium (Cat# MD-0050).

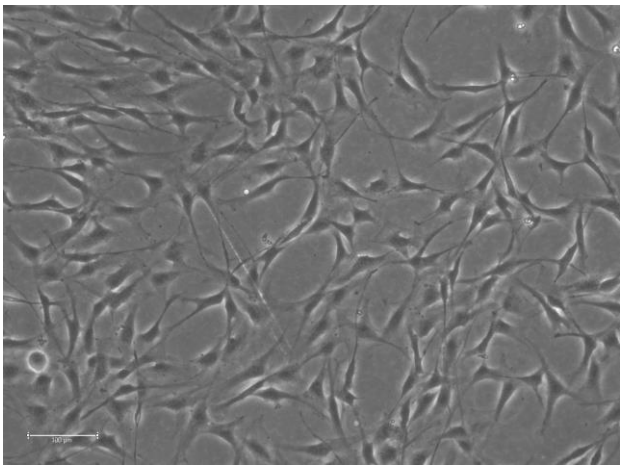

Figure 1. Phase contrast image of Human Meningeal Cells (HMC).

Product Details

Tissue	Human Meningeal Cells (HMC)
Package Size	0.5 x 10^6 cells/vial
Shipped	Cryopreserved
Storage	Liquid nitrogen
Growth Properties	Adherent
Media	Meningeal Cell Growth Medium (Cat# MD-0050)

Protocols

Thawing of Frozen Cells

1. Upon receipt of the frozen Human Meningeal Cells (HMC), it is recommended to thaw the cells and initiate the culture immediately in order to retain the highest cell viability.
2. Coat the culture vessels with 0.01% poly-L-lysine for more than 1 hours at 37ºC before use.
3. Prepare complete medium.
4. To thaw the cells, put the vial in 37°C water bath with gentle agitation for ~1 minute. Keep the cap out of water to minimize the risk of contamination.
5. Pipette the cells into a 15ml conical tube with 5ml fresh Meningeal Cell Growth Medium (Cat# MD-0050).
6. Centrifuge at 1,000rpm (~220g) for 5 minutes under room temperature.
7. Remove the supernatant and resuspend the cells in fresh culture medium.
8. Culture HMC in 100 mm culture dish or T75 flask pre-coated with 0.01% poly-L-lysine.
9. Change the medium every three days until the culture is approximately 70% confluent. Once the culture reaches 70% confluency, change medium every other day until the culture is approximately 90% confluent.

Safety Precaution: *it is highly recommended that protective gloves and clothing should be used when handling frozen vials.*

Standard Culture Procedure

1. Human Meningeal Cells (HMC) can be cultured in Meningeal Cell Growth Medium (Cat# MD-0050).
2. When cells reach ~90% confluence or above, remove the medium, and wash once with sterile PBS (5ml/T75 flask).

3. Add ~2.5ml of 0.25% Trypsin-EDTA to the flask and incubate for ~3 minutes at 37°C. Neutralize the enzyme by adding 2-3 volumes of cell culture medium.
4. Centrifuge 1,000rpm (~220g) for 5min and resuspend the cells in desired volume of medium.
5. Seed HMC on the poly-L-lysine-coated new culture vessels at 5×10^3 cells/cm^2.

References

[1] Hartmann, D., Sievers, J. Pehlemann, F. W. and Berry, M. (1992) Destruction of meningeal cells over the medial cerebral hemisphere of newborn hamster prevents the formation of the infrapyramidal blade of the dentate gyrus. J. Comparative Neurol. 320:33-61.
[2] Franzen, R., Martin, D., Daloze, A., Moonen, G. and Schoenen, J. (1999) Grafts of meningeal fibroblasts in adult rat spinal cord lesion promote axonal regrowth. Neuroreport 10:1551-1556.
[3] Hartmann, D., Schulze, M. and Sievers, J. (1998) Meningeal cells stimulate and direct the migration of cerebellar external granule cells in vitro. J. Neurocytol. 27:395-409.

Disclaimers