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Product Information

Mouse Brain Vascular Pericytes

Catalog Number	10MU-014	Cell Number	0.5 x 10^6 cells/vial
Species	*Mus musculus*	Storage Temperature	Liquid Nitrogen

Description

Brain Vascular Pericytes (BVP) are perivascular cells that are closely associated with the endothelium of capillaries and other small vessels [1]. BVP, located between endothelial cells and astrocytes in the brain, communicate with other cells by extending long cytoplasmic processes which wrap around the capillaries [1, 2]. BVP participate in a variety of processes including angiogenesis, endothelial cell survival, regulation of capillary blood flow, and establishment and maintenance of the blood-brain barrier [3, 4]. Pericyte dysregulation has been linked to several pathological conditions such as hypertension, diabetic retinopathy, atherosclerosis, multiple sclerosis, Alzheimer's disease, and tumor angiogenesis [2, 4]. The unique and diverse functions of BVP make them novel candidates for cell therapy in regenerative medicine. Cultured primary mouse BVP (MBVP) are a useful in vitro model for understanding the molecular mechanisms of blood-brain barrier regulation and for studying a wide variety of central nervous system diseases.

iXCells Biotechnologies provides high quality Mouse Brain Vascular Pericytes (MBVP), which are isolated from adult mouse brain and cryopreserved at P2, with >0.5 million cells in each vial. MBVP express Neural/glial antigen 2 (NG2) and α-smooth muscle actin. They are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi and can further expand for 5 population doublings in Mouse Pericyte Growth Medium (Cat# MD-0092) under the condition suggested by iXCells Biotechnologies.

Product Details

Tissue	Adult Mouse Brain
Package Size	0.5 x 10^6 cells/vial
Passage Number	P2
Shipped	Cryopreserved
Storage	Liquid nitrogen
Growth Properties	Adherent
Media	Pericyte Growth Medium (Cat # MD-0030)

Protocols

Thawing of Frozen Cells

1. Upon receipt of the frozen cells, it is recommended to thaw the cells and initiate the culture immediately in order to retain the highest cell viability.
2. 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.
3. Pipette the cells into a 15ml conical tube with 5ml fresh Pericyte Growth Medium (Cat # MD-0030).
4. Centrifuge at 1000rpm (~220g) for 5 minutes under room temperature.
5. Remove the supernatant and resuspend the cells in fresh culture medium.
6. Culture the cell in 100 mm culture dish or T75 flask. Note: culture dishes or flasks should be pre-coated with 0.01% poly-l-lysine or rat collagen 1 >1 hours at 37oC before use.

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

Standard Culture Procedure

1. Mouse brain vascular pericytes can be cultured in Pericyte Growth Medium (Cat # MD-0030).
2. When cells reach ~80-90% confluence, remove the medium, and wash once with sterile PBS (5ml/T75 flask).
3. Add ~2.5ml of 0.05% 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 new culture vessels at 5×10^3 cells/cm^2. Note: culture dishes or flasks should be pre-coated with 0.01% poly-l-lysine or rat collagen 1 >1 hours at 37oC before use.

References

[1] Dore-Duffy P, Cleary K. (2011) "Morphology and properties of pericytes." Methods Mol Biol. 686:49-68.
[2] Allt G, Lawrenson JG. (2001) "Pericytes: cell biology and pathology." Cells Tissues Organs. 169: 1-11.
[3] Daneman R, Zhou L, Kebede A, Barres B. (2010) "Pericytes are required for blood-brain barrier integrity during embryogenesis." Nature. 468:562-566. [4] Kutcher M, Herman I. (2009) "The pericyte: cellular regulator of microvascular blood flow." Microvasc Res. 77: 235-246.

Disclaimers

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