

## Product Information

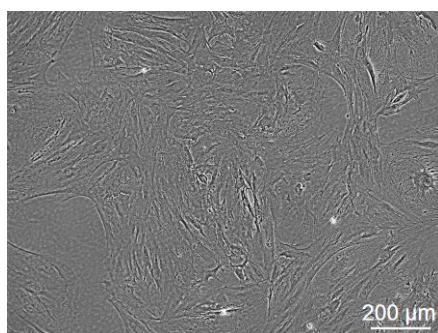
### Rat Brain Vascular Pericytes (RBVP)

Catalog Number	10RA-010	Cell Number	0.5 million cells/vial
Species	<i>Rattus norvegicus</i>	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 rat BVP (RBVP) 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 Rat Brain Vascular Pericytes (RBVP), which are isolated from adult rat brain and cryopreserved at P2, with  $\geq 0.5$  million cells in each vial. RBVP express Neural/glial antigen 2 (NG2) and  $\alpha$ -smooth muscle actin. They are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi and can further expand no more than 3 passages in **Rat Pericyte Growth Medium** (Cat# MD-0030) under the condition suggested by iXCells Biotechnologies. Additional expansion may decrease the purity and proliferation rate.



**Figure 1.** Phase contrast image of Rat Brain Vascular Pericytes (RBVP).

## Product Details

<b>Tissue</b>	Adult Rat Brain
<b>Package Size</b>	0.5 million cells/vial
<b>Passage Number</b>	P2
<b>Shipped</b>	Cryopreserved
<b>Storage</b>	Liquid nitrogen
<b>Growth Properties</b>	Adherent
<b>Media</b>	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 1-2 minutes. Keep the cap out of water to minimize the risk of contamination.
3. Pipette the cells into a 15 mL conical tube with 5ml fresh **Pericyte Growth Medium** (Cat # MD-0030).
4. Centrifuge at 1,000 rpm (~220 g) for 5 minutes under room temperature.
5. Remove the supernatant and resuspend the cells in fresh culture medium.
6. Culture the cell in the T75 flask. Change the medium every other day until cells reach 80-90% confluence.

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

### Standard Culture Procedure

1. Rat 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 (5 mL/T75 flask).
3. Add 3 mL 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 1,000 rpm (~220 g) for 5 minutes and resuspend the cells in desired volume of medium.
5. Seed the cells in the new culture vessels at  $5 \times 10^3$  cells/cm<sup>2</sup>. Change the medium every other day until cells reach 80-90% confluence.

## 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

This product is intended for laboratory research purposes only. It is not intended for use in humans. While iXCells Biotechnologies uses reasonable efforts to include accurate and up-to-date information on this product sheet, we make no warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. iXCells Biotechnologies does not warrant that such information has been confirmed to be accurate.

This product is sent with the condition that you are responsible for its safe storage, handling, and use. iXCells Biotechnologies is not liable for any damages or injuries arising from receipt and/or use of this product. While reasonable effort is made to insure authenticity and reliability of strains on deposit, iXCells Biotechnologies is not liable for damages arising from the misidentification or misrepresentation of cultures.  
© iXCells Biotechnologies 2015. All rights reserved.