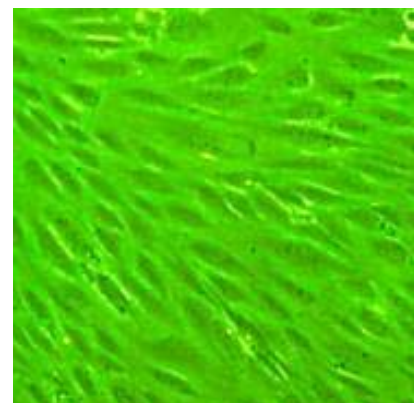


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Rat Brain Microvascular Endothelial Cells

(RBMVEC)

Rat Brain Microvascular Endothelial Cells (RBMVEC) are derived from the brain of adult Sprague Dawley rat. The cells are cryopreserved at second passage. RBMVEC can be cultured and propagated 16 population doublings. HIV-1 Tat protein alters the tight junction protein expression and distribution in cultured brain endothelial cells. It is believed such alteration lead to disturbances of the blood-brain barrier (BBB) integrity and contributes to HIV trafficking in to the brain¹. Endothelial cell-derived monocyte-chemoattractant protein-1 (MCP-1) plays a key role in leukocyte recruitment across the blood-brain and blood-retinal barriers *in vivo*². Three-dimensional model indicates that dipyridamole can improve BBB Function³. Maintenance of BBB function during and following normoxic-cormoglycemic flow cessation appears to depend on intact nitric oxide signaling and IL-6 release⁴. Expression of metabotropic glutamate receptors may modulate synaptic transmission and determine microvascular function and dysfunction⁵. VEGF mRNA and VEGF receptor F1K-1/KDR are both higher in neonatal than in adult microvessels suggesting that microvascular cell turnover continues in the adult brain⁶. Hypoxia increases the aparacellualr flux across the cell monolayer via the release of VEGF, which in turn leads to the dislocalization, decreased expression and enhanced phosphorylation of Zonula occludens-1(ZO-1)⁷.



Characterization:

Inspection: Tissue obtained inspected animals.

1. Andras IE, et al, J Neurosci Res. 2003 Oct 15; 74(2): 255-65
2. Harkness, KA, et al, Neuroimmunol. 2003 Sep; 142(1-2): 1-9
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4. Krizanac-Bengez, L, et al, Brain Res. 2003 Jul. 11; 977(2): 239-46
5. Gillard, SE, et al, J Comp. Neurol. 2003 Jun. 30; 461(3): 317-32
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Name	Product Description	Size (vol)
RBMVEC Total Kit	Each kit contains an ampoule of cryopreserved RBMVEC (R840-05), 500 ml of Rat Brain Endothelial Cell Growth Medium (R811-500), 100 ml of Attachment Factor Solution (123-100), and a Subculture Reagent Kit (090K).	1 Kit
Cryopreserved RBMVEC	(>500,000 cells in an ampoule) Cryopreserved at second passage in Rat Brain	1 Ampoule

	Endothelial Cell Basal Medium that contains 10% FBS and 10% DMSO.	
Proliferating RBMVEC In Flasks	Cultured and shipped in flasks at third passage in Rat Brain Endothelial Cell Growth Medium.	T-25 Flask 2 T-25 Flasks T-75 Flask or 3 T-25 Flasks
Proliferating RBMVEC In Multiwell Plates	Cultured and shipped in plates at third passage in Rat Brain Endothelial Cell Growth Medium.	6 well 12 well 24 well 48 well 96 well
RBMVEC Growth Medium	Optimized and ready for use.	500 ml
RBMVEC Growth Medium Kit	Basal Medium & Growth Supplement packaged separately.	Yields 500 ml
RBMVEC Basal Medium	Add Growth Supplement before use.	500 ml
RBMVEC Growth Supplement		50 ml x 2
Subculture Reagent Kit	100 ml each of HBSS, Trypsin/EDTA & Trypsin Neutralizing Solution	100 ml
RBMVEC RNA	Total RNA prepared from RBMVEC	10 µg 25 µg

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