Human Brain Microvascular Endothelial Cells

Cat# NB-11-0016

Introduction

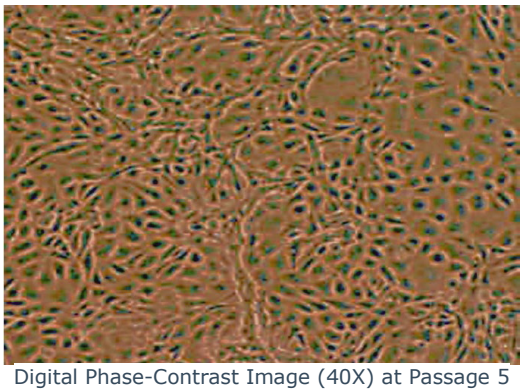
Primary Human Brain Microvascular Endothelial Cells (NB-11-0016) were initiated by elutriation of dispase dissociated normal human brain cortex tissue.

Cell initiation

These cells were originated using CSC Complete Serum-Free Medium (NB-11-0061), are available at < 12 Cumulative Population Doublings (CPD) in vitro [Passage 3] and were cryopreserved in aliquots of ~ 1.5 X 10^6 cells. This vial will initiate a Passage 4 cell culture in a 75cm^2 flask.

These cells are available in cryopreserved vials as well as in 25cm^2 and 75cm^2 proliferating cell culture flasks.

We have other individual donor lots available. Please contact us for details.



Digital Phase-Contrast Image (40X) at Passage 5

Companion Products

Each vial or flask of cells is shipped to Customer with Bac-Off® (antibiotic) and CultureBoost (animal derived growth factors) or CultureBoost-R (human recombinant growth factors) at no additional cost.

These cells are qualified for use with: CSC Complete Serum Free Medium (NB-11-0061) and CSC Complete Medium which includes 10% serum (NB-11-0046); CSC Attachment Factor™ (NB-11-0069); CSC Passage Reagent Group™ (NB-11-0076) and CSC Cell Freezing Medium (NB-11-0075).

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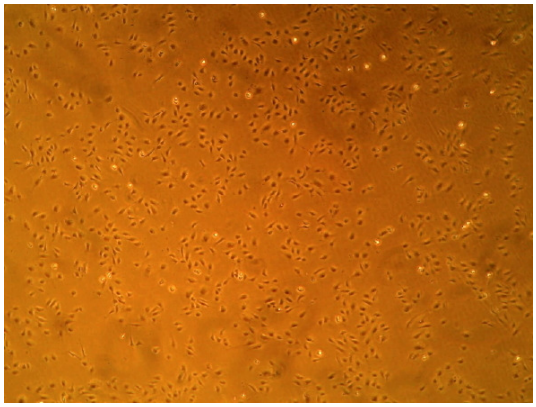
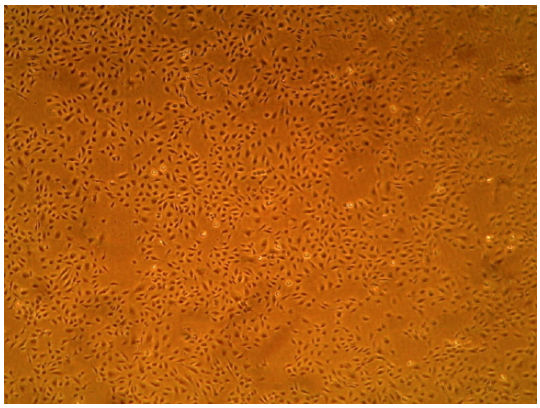
Cell Growth Images



NB-11-0016 1 day after plating, plated with Attachment Factor, fed using CSC Complete Medium Kit With Serum and Cultureboost-R (NB-11-0048)



NB-11-0016 3 days after plating, plated with Attachment Factor, fed using CSC Complete Medium Kit With Serum and Cultureboost-R (NB-11-0048)

Standard Tests

TEST	RESULTS
HIV Serologic Test (donor level HIV AB EIA)	Negative
HIV PCR TEST (frozen cell pool by CLIA Licensed Clinical Lab)	Negative
Test of frozen cells for Mycoplasma spp. (ATCC method by CLIA Licensed Clinical Lab)	Negative

Miscellaneous Tests

TEST	RESULTS
Cytoplasmic VWF / Factor VIII	> 95% positive by immunofluorescence
Cytoplasmic uptake of Di-I-Ac-LDL	> 95% positive by immunofluorescence

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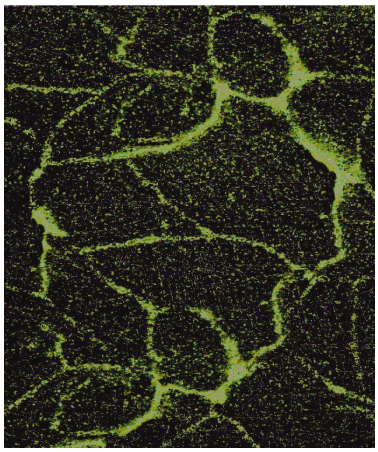
Additional Information

These cells are involved in the blood-brain barrier, HIV-Aids pathology, inflammation, and interact in vivo with astrocyte cells (NB-11-0009) and pericyte cells (NB-11-0023)

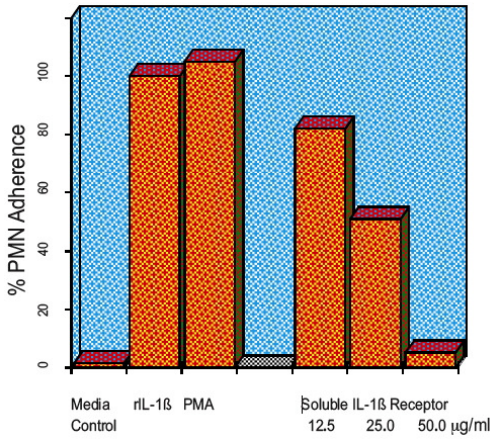
Functional Test: IL-1ß Stimulated Leukocyte Adherence

Primary Brain Microvascular Cells can provide a useful tool for adherence, transport and permeability studies of the blood-brain-barrier (BBB). NB-11-0016 cells demonstrate particular markers of differentiation (interdigitated cell contact, desmosomes, (Z0-1 protein epitopes) similar to those observed in vivo. The morphological and immunofluorescent markers detailed for NB-11-0016 are suggestive of a differentiated cell monolayer that can be used to study properties of the human BBB. These cells are extensively used in studies of HIV transmission and AIDS-related BBB dynamics.



Digital Immunofluorescence ZO-1 mAb (6300X) at Passage 5

In a functional test, NB-11-0016 monolayers in CSC Serum-Free Maintenance Medium were tested for IL-1ß stimulated leukocyte adherence. Human leukocyte adherence was specific and dose-dependent as demonstrated by pretreatment of the microvascular monolayer with soluble IL-1ß receptor. Nonspecific leukocyte adherence caused by phorbol ester was the positive control. Polymorphonuclear leukocytes (PMN) were freshly isolated from peripheral blood by elutriation.



Response to recombinant human IL-1ß stimulation in a PMN adherence assay at P5 in vitro.

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