

## DERMAL MICROVASCULAR ENDOTHELIAL CELLS

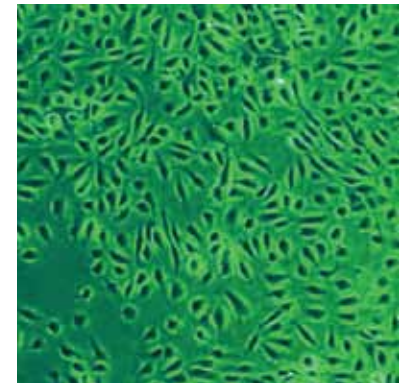
ATCC® Normal Human Primary Dermal Microvascular Endothelial Cells, when grown in Vascular Cell Basal Medium supplemented with either Microvascular Endothelial Cell Growth Kit–BBE or Microvascular Endothelial Growth Kit–VEGF components, provides an ideal cell system for propagation in low-serum conditions (5% FBS).



Each lot of ATCC Normal Human Primary Dermal Microvascular Endothelial Cells is:

- Cryopreserved in the third passage to ensure ensure the greatest purity coupled with high viability and plating efficiency
- Performance tested together with ATCC Primary Cell Solutions™ media, kit supplements and reagents to guarantee optimum reliability
- Thoroughly tested for sample purity as part of the ATCC commitment to quality

Applications for use might include research related to drug screening/uptake, angiogenesis, oncology, inflammation, and intercellular communication.



### OPTIMIZED MEDIA MAKES A DIFFERENCE

Vascular Cell Basal Medium is a sterile, phenol red-free, liquid tissue culture medium intended for use as one component in a complete ATCC Primary Cell Solutions system. Each complete ATCC Primary Cell Solutions vascular cell system is designed to selectively sustain the proliferation and plating efficiency of cells derived from normal human cardiovascular tissues, including smooth muscle cells, large vessel endothelial cells (e.g., umbilical vein, aorta) and microvascular endothelial cells.

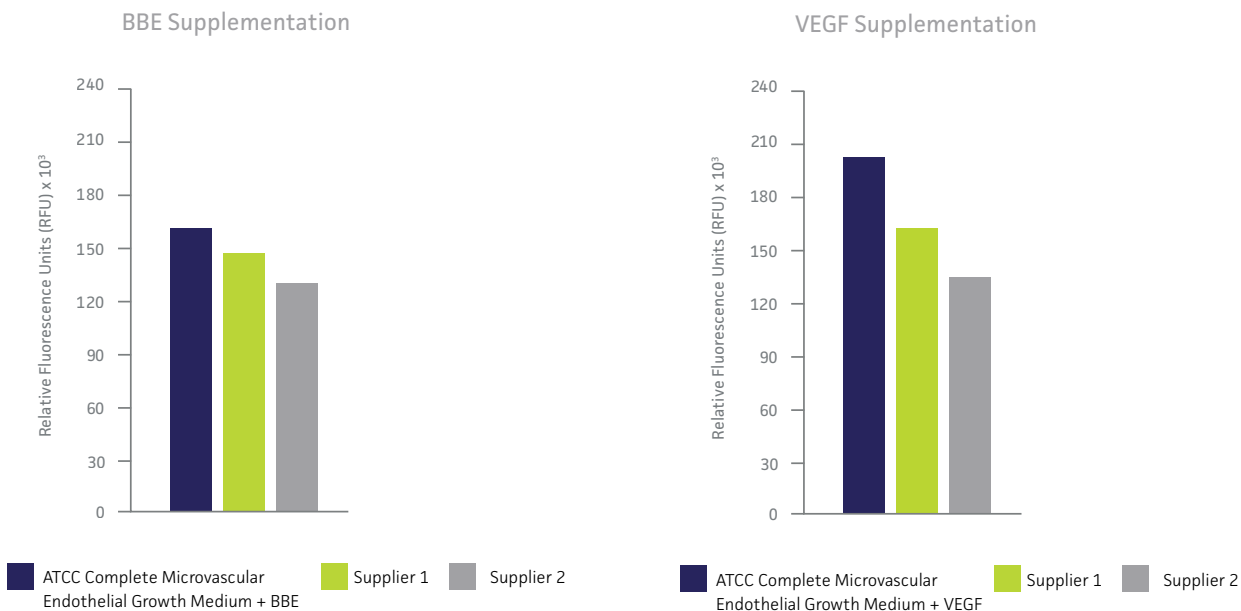
Primary Dermal Microvascular endothelial cells are effectively supported by the cell-specific ATCC Primary Cell Solutions system consisting of Vascular Cell Basal Medium supplemented with either one of two growth kits: Microvascular Endothelial Cell Growth Kit–BBE or Microvascular Endothelial Cell Growth Kit–VEGF. Experimental design dictates which Endothelial Cell Growth Kit should be used. Use of the Microvascular Endothelial Cell Growth Kit–VEGF will support a faster rate of proliferation because of the presence of several purified recombinant human (rh) growth factors (rh VEGF, rh EGF, rh FGF basic and rh IGF-1) combined with heparin and hydrocortisone. Use of the Microvascular Endothelial Cell Growth Kit–BBE, which contains Bovine Brain Extract (BBE), is recommended if a less defined cell culture medium is desired.

These unique formulations are designed to produce cultures with:

- Functional expression of relevant biomarkers
- Normal morphology
- Superior growth and proliferation

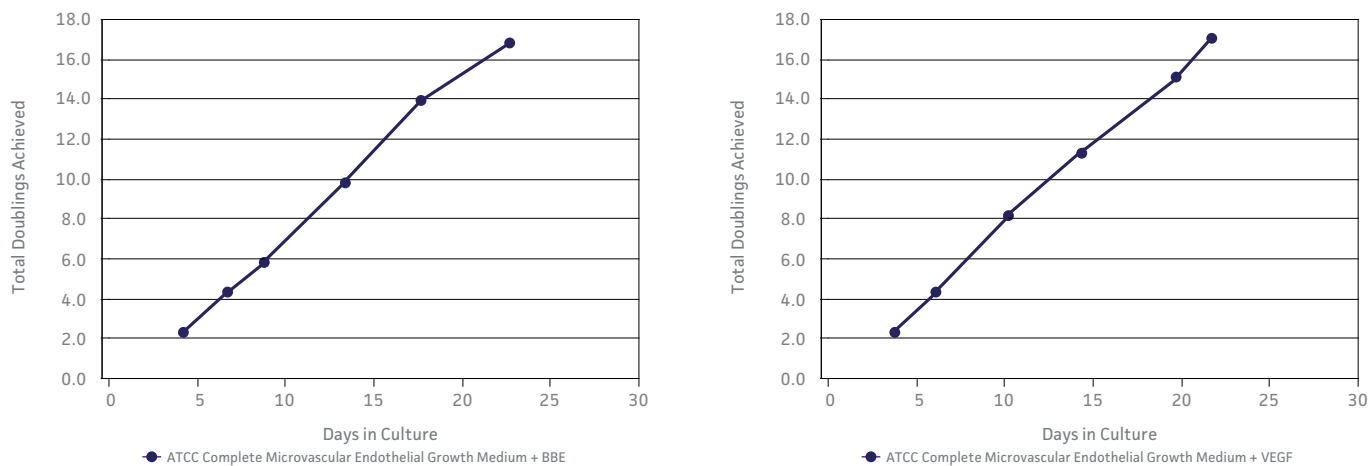
Use of this complete system removes the need for additional components such as feeder layers, extracellular matrix proteins or other substrates.

## Microvascular Cells Grown in Different Brands of Low Serum Media



ATCC Primary Cell Solutions primary dermal microvascular endothelial cells were taken from liquid nitrogen and cultures initiated. The cells were cultured for 3 to 4 days. The cells were then seeded in triplicate into a 24-well plate at 2,000 cells/cm<sup>2</sup> and grown for 4 days in different brands of low serum media. Cell proliferation was measured by adding alamarBlue<sup>®</sup> to each well, incubating for two hours, and then measuring fluorescence using a Wallac VICTOR2™ MultiLabel Counter. The medium was not changed during the incubation period; the assay is a measure of a media’s capacity to support log-phase growth over time. The higher the Relative Fluorescence Unit (RFU) value, the higher the rate of cell proliferation.

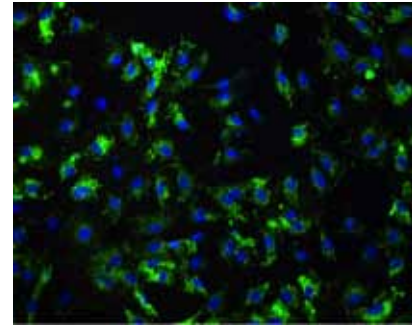
## Robust Cell Growth in ATCC Complete Microvascular Endothelial Cell Medium



\* All cells achieved ≥ 16 population doublings in three weeks under these experimental condition; approximately 3.3 population doublings were achieved per passage.

## Expression of Cell-Specific Markers

ATCC Primary Cell Solutions dermal microvascular endothelial cells were dual stained for von Willebrand factor as a marker for endothelial cells and smooth muscle  $\alpha$ -actin. Green fluorescence (FITC-conjugated) indicates the expression of von Willebrand factor (a marker for endothelial cells) and red fluorescence (Cy3-labeled) points to the expression of  $\alpha$ -actin. The nuclei are blue with Hoechst stain.

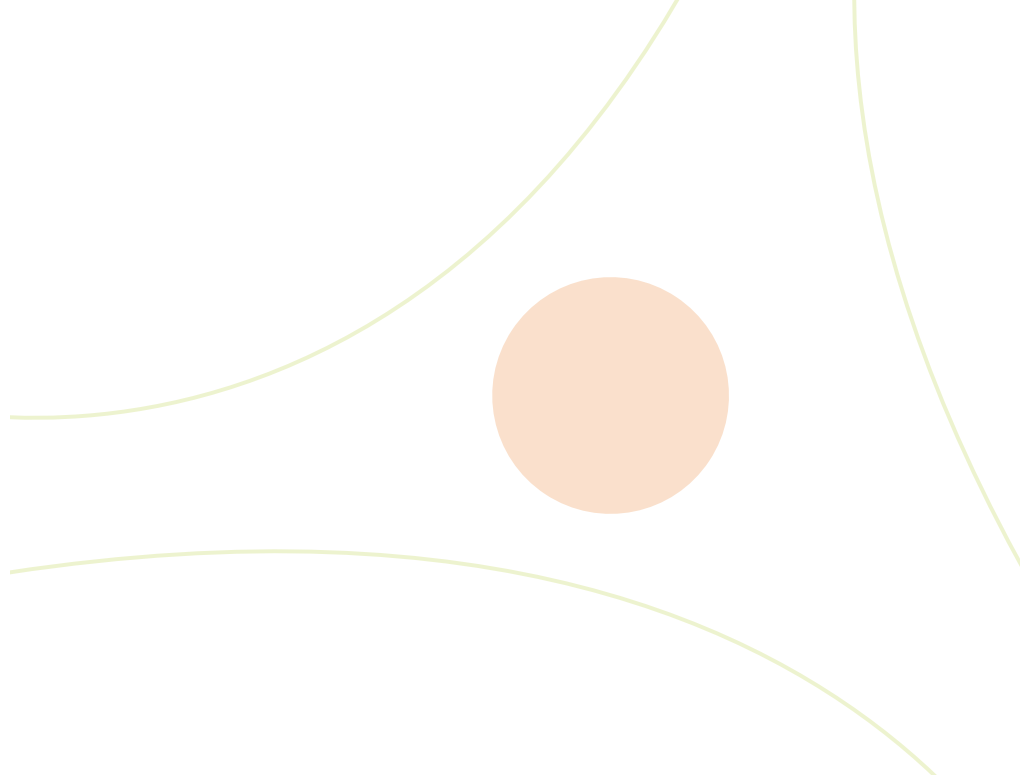


PUTTING ALL THE PIECES TOGETHER ADDS UP TO YOUR SUCCESS.



To achieve the best possible results, we suggest that you order a complete system for each cell type:

	Product Name	Components	Catalog No.
1	Primary Dermal Microvascular Endothelial Cells; Normal, Human	$\geq 5 \times 10^5$ viable cells	PCS-110-010
2	Vascular Cell Basal Medium	475 mL	PCS-100-030
3	Microvascular Endothelial Cell Growth Kit-BBE	1 kit	PCS-110-040
3	Microvascular Endothelial Cell Growth Kit-VEGF	1 kit	PCS-110-041
4	Phenol Red	1 mL	PCS-999-001
4	Penicillin-Streptomycin-Amphotericin B Solution	1 mL	PCS-999-002
4	Trypsin-EDTA for Primary Cells	100 mL	PCS-999-003
4	Trypsin Neutralizing Solution	100 mL	PCS-999-004
4	Gentamicin-Amphotericin B Solution	1 mL	PCS-999-025
4	Dulbecco's Phosphate Buffered Saline (D-PBS)	500 mL	ATCC 30-2200



Additional cells/cell types will be added in the coming months.  
Visit us online at [www.atcc.org/PCS](http://www.atcc.org/PCS) to bookmark the primary cell page for easy reference.

SUPERIOR QUALITY. EXPERT SUPPORT. RELIABLE RESULTS.



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