



Product Sheet

# Vascular Cell Basal Medium (ATCC® PCS-100-030™)

Please read this FIRST

Storage Temp.  
**2°C to 8°C, protect  
from light**

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Biosafety Level  
**1**

## Description

**Product Description:** 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. This system is designed to support cells derived from the human cardiovascular system, including the following cell types:

### Endothelial cells derived from large vessels

- Primary Umbilical Vein Endothelial Cells; Normal, Human, ATCC PCS-100-010
- Primary Umbilical Vein Endothelial Cells; Normal, Human, Pooled, ATCC PCS-100-013
- Primary Aortic Endothelial Cells; Normal, Human, ATCC PCS-100-011
- Primary Coronary Artery Endothelial Cells; Normal, Human, ATCC PCS-100-020
- Primary Pulmonary Artery Endothelial Cells; Normal, Human, ATCC PCS-100-022

### Microvascular endothelial cells

- Primary Dermal Microvascular Endothelial Cells; Normal, Human, Neonatal, ATCC PCS-110-010

### Smooth muscle cells derived from large vessels

- Primary Aortic Smooth Muscle Cells; Normal, Human, ATCC PCS-100-012
- Primary Coronary Artery Smooth Muscle Cells; Normal, Human, ATCC PCS-100-021
- Primary Pulmonary Artery Smooth Muscle Cells; Normal, Human, ATCC PCS-100-023

### Muscle cells derived from heart

- Primary Cardiomyocytes; Normal, Human, ATCC PCS-120-010

This system is designed to support cells derived from normal human large vessels such as human umbilical vein endothelial cells, aortic endothelial cells or aortic smooth muscle cells, as well as microvascular endothelial cells. Vascular Cell Basal Medium contains essential and non-essential amino acids, vitamins, other organic compounds, trace minerals and inorganic salts. To support the proliferation and plating efficiency of cells derived from the vascular system, Vascular Cell Basal Medium must be supplemented with the appropriate cell-specific growth kit.

- A. For endothelial cells derived from large vessels (e.g., Normal Primary Human Umbilical Vein Endothelial Cells (HUVEC), ATCC PCS-100-010, Primary Umbilical Vein Endothelial Cells; Normal, Human, Pooled, ATCC PCS-100-013, Primary Aortic Endothelial Cells, ATCC PCS-100-011), supplement Vascular Cell Basal Medium with one of the following kits:
  1. Endothelial Cell Growth Kit-BBE (ATCC PCS-100-040)
  2. Endothelial Cell Growth Kit-VEGF (ATCC PCS-100-041)
- B. For microvascular endothelial cells derived from normal human tissue (e.g., Primary Dermal Microvascular Endothelial Cells; Normal, Human, Neonatal, ATCC PCS-110-010), supplement Vascular Cell Basal Medium with one of the following kits:
  1. Microvascular Endothelial Cell Growth Kit-BBE (ATCC PCS-110-040)
  2. Microvascular Endothelial Cell Growth Kit-VEGF (ATCC PCS-110-041)
- C. For smooth muscle cells derived from large vessels (e.g., Primary Aortic Smooth Muscle Cells, ATCC PCS-100-012), supplement Vascular Cell Basal Medium with the Vascular Smooth Muscle Cell Growth Kit (ATCC PCS-100-042).
- D. Optional media supplements:
  1. Gentamicin-Amphotericin B Solution (ATCC PCS-999-025)
  2. Penicillin-Streptomycin-Amphotericin B Solution (ATCC PCS-999-002)
  3. Phenol Red (ATCC PCS-999-001)

**Volume:** 475 mL

## Directions for Use

### Preparation of Complete Growth Media

1. Obtain one growth kit from the freezer; make sure that the caps of all components are tight.
2. Thaw the components of the growth kit just prior to adding them to the basal medium. It is necessary to warm the L-glutamine component in a 37°C water bath and shake to dissolve any precipitates prior to adding to the basal medium.
3. Obtain one bottle of Vascular Cell Basal Medium (475 mL) from cold storage.
4. Decontaminate the external surfaces of all growth kit component vials and the basal medium bottle by spraying them with 70% ethanol.
5. Using aseptic technique and working in a laminar flow hood or biosafety cabinet, transfer the volume of each growth kit component, as indicated in Table 1, 2, 3, 4, or 5 to the bottle of basal medium using a separate sterile pipette for each transfer.

**Table 1.** If using the Endothelial Cell Growth Kit-BBE (ATCC® PCS-100-040), add the indicated volume for each component:

Component	Volume	Final Concentration
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Bovine Brain Extract (BBE)	1.0 mL	0.2%
rh EGF	0.5 mL	5 ng/mL
L-glutamine	25.0 mL	10 mM
Heparin sulfate	0.5 mL	0.75 Units/mL
Hydrocortisone hemisuccinate	0.5 mL	1 µg/mL
Fetal Bovine Serum	10.0 mL	2%
Ascorbic Acid	0.5 mL	50 µg/mL

**Table 2.** If using the Endothelial Cell Growth Kit-VEGF (ATCC® PCS-100-041), add the indicated volume for each component:

Component	Volume	Final Concentration
rh VEGF	0.5 mL	5 ng/mL
rh EGF	0.5 mL	5 ng/mL
rh FGF basic	0.5 mL	5 ng/mL
rh IGF-1	0.5 mL	15 ng/mL
L-glutamine	25.0 mL	10 mM
Heparin sulfate	0.5 mL	0.75 Units/mL
Hydrocortisone hemisuccinate	0.5 mL	1 µg/mL
Fetal Bovine Serum	10.0 mL	2%
Ascorbic acid	0.5 mL	50 µg/mL

**Table 3.** If using the Vascular Smooth Muscle Growth Kit (ATCC® PCS-100-042), add the indicated volume for each component:

Component	Volume	Final Concentration
rh FGF-basic	0.5 mL	5 ng/mL
rh Insulin	0.5 mL	5 µg/mL
Ascorbic acid	0.5 mL	50 µg/mL
L-glutamine	25.0 mL	10 mM
rh EGF	0.5 mL	5 ng/mL
Fetal Bovine Serum	25.0 mL	5%

**Table 4.** If using the Microvascular Endothelial Cell Growth Kit-BBE (ATCC® PCS-110-040), add the indicated volume for each component:

Component	Volume	Final Concentration
Bovine Brain Extract (BBE)	1.0 mL	0.2%
rh EGF	0.5 mL	5 ng/mL
L-glutamine	25.0 mL	10 mM
Heparin sulfate	0.5 mL	0.75 Units/mL
Hydrocortisone hemisuccinate	0.5 mL	1 µg/mL
Fetal Bovine Serum	25.0 mL	5%
Ascorbic acid	0.5 mL	50 µg/mL

**Table 5.** If using the Microvascular Endothelial Cell Growth Kit-VEGF (ATCC® PCS-110-041), add the indicated volume for each component:

Component	Volume	Final Concentration
rh VEGF	0.5 mL	5 ng/mL
rh EGF	0.5 mL	5 ng/mL
rh FGF basic	0.5 mL	5 ng/mL
rh IGF-1	0.5 mL	15 ng/mL
L-glutamine	25.0 mL	10 mM
Heparin sulfate	0.5 mL	0.75 Units/mL
Hydrocortisone hemisuccinate	0.5 mL	1 µg/mL
Fetal Bovine Serum	25.0 mL	5%

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Ascorbic acid	0.5 mL	50 µg/mL
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**Table 6.** If using the Cardiomyocyte Growth Kit (ATCC® PCS-120-040), add the indicated volume for each component:

Component	Volume	Final Concentration
L-Glutamine	25.0 mL	10 mM
Fetal Bovine Serum	25.0 mL	5%
Fetuin	5.0 mL	25 mg/mL
rh FGF-b	0.5 mL	5 ng/mL
rh Insulin	0.5 mL	5 mg/mL
Ascorbic Acid	0.5 mL	50 µg/mL
rh EGF/TGF-b1	0.5 mL	5 ng/mL, 30 pg/mL

Antimicrobials and phenol red are not required for proliferation but may be added if desired. The recommended volume of each **optional** component to be added to the complete growth media is summarized in Table 7.

**Table 7.** Addition of Antimicrobials/Antimycotics and Phenol Red (Optional)

Component	Volume	Final Concentration
Gentamicin- Amphotericin B Solution	0.5 mL	Gentamicin: 10 µg/mL Amphotericin B: 0.25 µg/mL
Penicillin- Streptomycin- Amphotericin B Solution	0.5 mL	Penicillin: 10 Units/mL Streptomycin: 10 µg/mL Amphotericin B: 25 ng/mL
Phenol Red	0.5 mL	33 µM

- Tightly cap the bottle of complete growth medium and swirl the contents gently to assure a homogeneous solution. Do not shake forcefully to avoid foaming. Label and date the bottle.
- Complete growth media should be stored in the dark at 2°C to 8°C (do not freeze). When stored under these conditions, complete media is stable for 30 days.

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