



Data Sheet

Endothelial Basal Medium

Catalog # NBP-03

Product Description

Endothelial Basal Medium (NBP-03) is a sterile, liquid cell culture medium formulated for the *in vitro* maintenance and expansion of primary endothelial cells. It is optimized to support endothelial cell growth when supplemented with appropriate growth factors, serum, and additional components (e.g., Endothelial Cell Growth Supplement Kit, sold separately). The basal medium provides essential nutrients, inorganic salts, vitamins, amino acids, and a buffering system, but contains **no serum, growth factors, or antibiotics**.

This medium is designed for use with human and animal endothelial cells, including but not limited to human umbilical vein endothelial cells (HUVEC), human aortic endothelial cells (HAEC), and microvascular endothelial cells.

Product Specifications

Parameter	Specification
Catalog Number	NBP-03
Form	Liquid, sterile
Volume	500 mL
pH	7.2 – 7.4 (at 25°C)



Parameter	Specification
Osmolality	280 – 320 mOsm/kg
Endotoxin Level	≤ 0.1 EU/mL
Sterility	Negative for bacteria, fungi, and mycoplasma
Storage	2 – 8 °C, protected from light
Shelf Life	12 months from date of manufacture when stored as directed

Composition

The medium contains the following components (partial list; proprietary formulation):

- **Amino Acids:** L-Glutamine, L-Arginine, L-Cystine, L-Isoleucine, L-Leucine, L-Lysine, L-Methionine, L-Phenylalanine, L-Threonine, L-Tryptophan, L-Tyrosine, L-Valine
- **Vitamins:** Biotin, Choline chloride, D-Ca-Pantothenate, Folic acid, Niacinamide, Pyridoxine, Riboflavin, Thiamine, Vitamin B12, i-Inositol
- **Inorganic Salts:** Calcium chloride, Magnesium sulfate, Potassium chloride, Sodium chloride, Sodium phosphate monobasic
- **Other Components:** D-Glucose, Sodium bicarbonate, HEPES, Phenol red (pH indicator)
- **No Serum, Growth Factors, or Antibiotics**

Note: The medium does not contain endothelial cell growth supplements. These must be added separately according to the experimental design.



Storage and Handling

- Store at **2–8 °C** in the dark. **Do not freeze**, as freezing may cause precipitation or loss of activity.
- Protect from light to prevent degradation of light-sensitive components (e.g., vitamins).
- If any precipitate is observed before use, gently warm the bottle to 37 °C and mix thoroughly. Do not use if turbidity or contamination is evident.
- Use aseptic technique when dispensing to maintain sterility.

Instructions for Use

Preparation of Complete Medium

For optimal endothelial cell growth, combine Endothelial Basal Medium with the following supplements (typical final concentrations, to be optimized per cell type):

- **Endothelial Cell Growth Supplement** (e.g., Catalog # NBPGS-01)
 - **Fetal Bovine Serum (FBS)** : 2–10% (v/v)
 - **Antibiotics/Antimycotics** (if required): 1× Penicillin-Streptomycin or equivalent
1. Warm the basal medium to 37 °C in a water bath.
 2. Add the recommended volume of growth supplement, serum, and antibiotics under sterile conditions.
 3. Mix gently. Filter-sterilize (0.2 µm) if aseptic addition is not guaranteed.
 4. Use immediately or store at 2–8 °C for up to 2 weeks.

Cell Culture

1. Pre-warm complete medium to 37 °C before adding to cells.
2. Culture endothelial cells in a humidified incubator at 37 °C with 5% CO₂.
3. Replace medium every 2–3 days.



4. Passage cells when 80–90% confluent using standard trypsin/EDTA dissociation.

Quality Control

Each lot of Endothelial Basal Medium is tested to ensure consistent performance:

- **Sterility:** Passes 14-day sterility test per USP <71> (bacteria and fungi).
- **Mycoplasma:** Negative by PCR or culture.
- **Endotoxin:** <0.1 EU/mL by LAL assay.
- **Performance:** Supports at least 5 population doublings of HUVEC (when supplemented with 5% FBS and 1× endothelial growth supplement) with ≥ 90% viability.

A Certificate of Analysis (CoA) is available upon request for each lot.

Applications

- Expansion of primary and immortalized endothelial cells
- Co-culture systems with pericytes or smooth muscle cells
- Drug screening and toxicology studies
- Vascular biology research

Safety and Precautions

- **For Research Use Only.** Not intended for human or animal therapeutic, diagnostic, or clinical use.
- Handle standard laboratory safety practices. Use appropriate personal protective equipment (gloves, lab coat, eye protection).



- Dispose of all waste according to local regulations.

Related Products

Product	Catalog Number
Endothelial Cell Growth Supplement Kit	NBPGS-01
Endothelial Cell Attachment Factor	NBP-AF-02
Trypsin/EDTA Solution (0.05%)	NBPTE-03
HUVEC, Cryopreserved solution	NBP-C-HUVEC

IMPORTANT: This warranty is valid for one month from the original purchase date.