

Smooth Muscle Cell Attachment Factor

Catalog # NBPS-AF-02

Product Description

Smooth Muscle Cell Attachment Factor (NBPS-AF-02) is a sterile, ready-to-use solution formulated to enhance the adhesion, spreading, and proliferation of primary and immortalized smooth muscle cells (SMCs) on tissue culture surfaces. The product contains a defined blend of extracellular matrix (ECM) proteins that mimic the native microenvironment of vascular and visceral smooth muscle. This formulation improves initial cell attachment, reduces the time to confluency, and supports the maintenance of characteristic spindle-shaped morphology and contractile protein expression.

Intended Use: For research use only. Not intended for human or clinical applications.

Product Specifications

Parameter	Specification
Catalog Number	NBPS-AF-02
Form	Liquid, sterile
Volume	20 mL (other sizes available upon request)
Protein Concentration	0.5 mg/mL total protein
pH	7.0 – 7.4 (at 25°C)



Endotoxin Level	≤ 0.25 EU/mL
Parameter	Specification
Sterility	Negative for bacteria, fungi, and mycoplasma
Storage	2 – 8 °C (do not freeze)
Shelf Life	12 months from date of manufacture when stored as directed

The solution is free of phenol red, antibiotics, and antimicrobial agents.

Storage and Handling

- Store at **2–8 °C** in the original container. **Do not freeze**; freezing will denature the proteins and reduce efficacy.
- Protect from light.
- If precipitation or turbidity is observed, discard the solution.
- Use aseptic technique when handling to maintain sterility.

Instructions for Use

5.1 Coating Protocol (for standard tissue culture vessels)

1. **Equilibrate:** Allow the solution to reach room temperature (15–30 minutes). Mix gently by inversion; do not vortex.
2. **Application:** Add enough diluted solution to completely cover the culture surface.



3. **Incubation:** Allow the coated vessel to stand at **room temperature** for **2–4 hours** or **overnight at 2–8 °C**.
4. **Aspiration:** Remove the coating solution immediately, rinse with 1XPBS before seeding cells. **Do not allow the surface to dry.**
5. **Cell Seeding:** Seed cells directly onto the coated surface in complete smooth muscle growth medium.

Coating Protocol for Labware with Limited Surface Area

- For microplates, coverslips, or microfluidic devices, follow the same dilution and incubation steps, adjusting volumes to ensure full coverage.

Quality Control

Each Smooth Muscle Cell Attachment Factor is tested to ensure consistent performance:

- **Sterility:** Passes 14-day sterility test per USP <71>.
- **Mycoplasma:** Negative by PCR.
- **Endotoxin:** ≤ 0.25 EU/mL by LAL assay.
- **Functional Assay:** Supports $\geq 80\%$ attachment of human aortic smooth muscle cells (HASMC) within 4 hours after seeding (compared to uncoated control) and promotes cell spreading and viability through 48 hours.
- **Protein Purity:** Collagen type I and fibronectin purity confirmed by SDS-PAGE.

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

Applications

- Coating of tissue culture plastic, glass, or coverslips for smooth muscle cell culture
- Enhancing attachment of primary smooth muscle cells (e.g., HASMC, HBSMC, HCASMC)
- Supporting immortalized smooth muscle cell lines
- Improving cell survival under low-serum or serum-free conditions
- Coating microfluidic devices and perfusion chambers for vascular models



- Studies of smooth muscle cell adhesion, migration, and contractility

Safety and Precautions

- **For Research Use Only.** Not for human or animal therapeutic or diagnostic use.
- Handle using standard laboratory safety practices. Use appropriate personal protective equipment (gloves, lab coat, safety glasses).
- Dispose of all waste according to local regulations.
- Avoid inhalation or direct contact with skin; in case of contact, wash thoroughly with water.

Related Products

Product	Catalog Number
Smooth Muscle Growth Medium	NBPS-02
Smooth Muscle Growth Supplement Kit	NBPS-GS-01
Trypsin/EDTA Solution (0.05%)	NBPTE-03
Trypsin Neutralization Solution	NBP-TN-01
HASMC, Cryopreserved	NBPS-C-HASMC

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