Product Information Sheet

VivoMatter™ Vivogel™ Matrix, LDEV-Free

Catalog #: VM001-10mL, VM001-50mL

Package size: 10mL/50mL

Product Description:

Basement membranes are continuous sheets of specialized extracellular matrix that form an interface between endothelial, epithelial, muscle, or neuronal cells and their adjacent stroma. Basement membranes are degraded and regenerated during development and wound healing. They not only support cells and cell layers, but also play an essential role in tissue organization that affects cell adhesion, migration, proliferation, and differentiation. Basement membranes provide major barriers to invasion by metastatic tumor cells.

Vivogel Matrix is a solubilized basement membrane extracted from the Engelbreth-Holm-Swarm (EHS) mouse tumor that comprises extracellular matrix proteins including laminin (glycoprotein), collagen IV, nidogen (glycoprotein), perlecan (heparan sulfate proteoglycan), and many other essential growth factors.

Vivogel Matrix can be used in multiple applications, including maintaining growth or promoting differentiation of primary endothelial, epithelial, smooth muscle, stem cells, and organoid/3-D cell cultures. It can also be utilized in cell attachment, neurite outgrowth, angiogenesis, in vitro cell invasion, and in vivo tumorigenicity assays.

Product Specifications:

Concentration: 8 - 12 mg/mL.

Source: Murine Engelbreth-Holm-Swarm (EHS) tumor.

Buffer: DMEM (with phenol red), with 10 µg/mL gentamicin.

Stability: Product is stable for two years from date of manufacture. See lot specific Certificate of Analysis for expiration date.

Storage: -80 ℃ for long-term storage. Do not use **Vivogel Matrix** that has been stored at 4 ℃ for more than 24 h. Please aliquot upon receival of the product. Avoid multiple freeze-thaw cycles.

Precaution:

When handling biohazardous materials such as human cells, safe laboratory procedures should be followed, and protective clothing should be worn.

Limitations:

- FOR LABORATORY RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.
- The safety and efficacy of this product in diagnostic or other clinical uses has not been established.
- Results may vary due to variations among tissue/cells derived from different donors or sources.

Material Qualifications:

A. STERILITY TESTING

- Tested negative by PCR test for 31 organisms and viruses, including: mycoplasma, 17 bacterial and
- virus strains typically included in mouse antibody production (MAP) testing, and 13 additional murine infectious agents including LDEV.
- Tested following USP sterility guidelines.
- Endotoxin concentration ≤ 8 EU/mL by LAL assay.

B. FUNCTIONAL ASSAYS

- Tube formation assay - **Vivogel Matrix** promotes formation of capillary-like structures by human (HBMVEC; HUVEC) or mouse (SVEC4-10) endothelial cells.

C. GELLING ASSAY

- **Vivogel Matrix** gels in less than 20 minutes at 37 ℃ and maintains the gelled form in culture medium for a minimum of 14 days at 37 ℃.

Coating Procedures:

Thaw **Vivogel Matrix** overnight at 2 - 8 ℃. Refrigerator temperatures may vary; therefore, it is recommended to keep **Vivogel Matrix** on ice in a refrigerator during the thawing process. Thawed **Vivogel Matrix** solidifies quickly at temperatures above 10 ℃; when working with **Vivogel Matrix**, keep it on ice to prevent untimely gelling.

There are many applications for **Vivogel Matrix** which require different thicknesses and concentrations. A thick gel is needed for applications such as endothelial cell formation of capillary-like structures (Tube Formation Assay), the differentiation of rat aorta tissue into capillary-like structures (Aortic Ring Assay), epithelial organoid formation, or tumor organoid formation. Some applications, such as propagation of primary cells, require a thin layer coating and not a thick gel; therefore, the thin layer method should be used.

A. THICK GEL METHOD

1. Thaw **Vivogel Matrix** as stated above.

2. Homogenize **Vivogel Matrix** by slowly pipetting solution up and down; be careful not to introduce air bubbles.

3. Keep culture plates on ice. Apply 200 µL per cm^2 onto the growth surface.

4. Place coated object at 37 ℃ for 30 minutes.

5. Coated objects are ready for use.

B. THIN LAYER METHOD (NON-GELLING)

1. Thaw **Vivogel Matrix** as stated above.

2. Homogenize **Vivogel Matrix** by slowly pipetting solution up and down; be careful not to introduce air bubbles.

3. Dilute **Vivogel Matrix** to desired concentration in COLD serum-free medium. A 1:100 dilution is recommended for the propagation of primary cells. Empirical determination of the optimal coating concentration for your application may be required.

4. Add a sufficient amount of solution to cover the entire growth surface area. A volume of 100 µL per cm^2 is recommended.

5. Incubate coated object at room temperature for one hour.

6. Aspirate coating solution and immediately plate cells. DO NOT ALLOW COATED SURFACE TO DRY OUT.

Data Example:

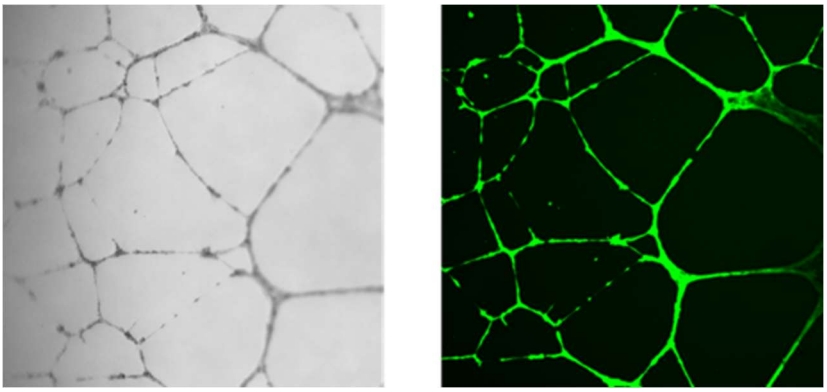

Figure 1. Angiogenesis of human umbilical cord endothelial cells (HUVECs) on **Vivogel Matrix**. Stained with Fluorescein Diacetate (FDA).