Servicebio® Swe Matrigel (for Angiogenesis,Invasion,Tumorigenesis,Containing Phenol Red)

Cat No.: G4130

Product Information

Product Name	Cat No.	Spec.
Swe Matrigel（for Angiogenesis,Invasion,Tumorigenesis,Containing Phenol Red）	G4130-1ML	1 mL
	G4130-5ML	5 mL
	G4130-10ML	10 mL

Product Introduction

Swe Matrigel is a soluble basal matrix extracted from extracellular matrix protein-rich EHS (Engelbreth-Holm-Swarm) mouse tumors. The composition of matrigel includes laminin, collagen type IV, entactin, and heparan sulfate proteoglycans. Additionally, it contains epidermal growth factor (EGF), transforming growth factor (TGF-beta), insulin-like growth factor (IGF), fibroblast growth factor (FGF), tissue plasminogen activator, and other growth factors present in the EHS tumor itself. At room temperature, matrigel can be rapidly polymerized to form a biologically active three-dimensional matrix, which simulates the composition, structure, physical properties, and function of the basement membrane of cells in vivo. This can promote the proliferation and differentiation of cells in vitro, such as epithelial cells, vascular endothelial cells, melanoma cells, and stem cells, among others. It plays an important role in studying cell morphology, physiological function, invasion, and promotion of tumourigenicity of difficult-to-tumourigenic cells.

Swe Matrigel is a sterile product that does not contain relevant viruses affecting experimental animals. It has a protein concentration of 8-12 mg/mL, which can be applied to experimental angiogenesis studies, in vivo tumourigenesis, 3D organoid culture, and tumor cell invasion.

Storage and Shipping Conditions

The product is transported on dry ice, stored at -20 °C, and protected from light. It is valid for two years. Following initial thawing, the product should be stored in the refrigerator at -20 °C. It should not be stored in a frost-free refrigerator.

Product Component

Component Number	Component	G4130		
G4130	Swe Matrigel (for angiogenesis, invasion, tumorigenesis, containing phenol red)	1 mL	5 mL	10 mL
Product Manuals		1 copy		

Product Features

1. Swe Matrigel may undergo a color change during the freezing and thawing process. This is due to the reaction between the bicarbonate buffer and carbon dioxide and phenol red, which changes color from light yellow to dark red. However, this color change will disappear completely within five percent CO2, a normal phenomenon that will not affect the product's functionality. Phenol red-free models are white or light yellow, and this phenomenon does not occur.
2. It is recommended that Swe Matrigel be thawed in ice and placed in a refrigerator at 4°C overnight, as it tends to gel. Once the product has been thawed, it should be vortexed to ensure homogeneity. However, it should not be blown to avoid forming large air bubbles, which may affect the product's performance.
3. Swe Matrigel is a gelatinous liquid that will gradually gelatinize above 10 °C. It is therefore important to

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note that all items in direct contact with the product, such as pipette tips, Petri dishes, culture plates, and culture medium, should be pre-cooled or frozen in advance prior to use.

4. The specific batch variability of the protein concentration of this product is indicated in the product's Certificate of Analysis (COA). The dosage of this product must be determined according to the experimental needs and the specific protein concentration to ensure the experiment's accuracy. However, diluting this product to a concentration of less than 3 mg/mL is not recommended.

Procedures

1. Swe matrigel should be thawed and dispensed while maintaining the product on ice.

The process of thawing is as follows: The product should be thawed in ice and subsequently placed in a refrigerator at a temperature of 4°C for approximately 12 hours. It is important to exercise caution to prevent the product from being placed on the refrigerator door by mistake or in a frequently opened refrigerator, as this may result in temperature fluctuations that could affect the product's performance. Following thawing, the vials should be vortexed to ensure homogeneity of the product.

The subsequent step is the dispensing of the product. Per the experimental requirements, pre-cooled pipette tips or pipettes are recommended for the aspiration and dispensing of the product into pre-cooled sterile centrifuge tubes. Following this, the dispensed product should be placed at a temperature of -20 ℃ or below in order to stabilize and protect it from light. Should the tip or pipette become obstructed during the dispensing process, it is recommended that a new pre-cooled tip or pipette be used at the earliest opportunity, with particular attention paid to aseptic operation.

2. Common encapsulation methods for Swe matrigel.

There are a number of encapsulation methods for matrigel, including the thin-layer gel method, the thick-layer gel method, and the thin-layer encapsulation method. These are suitable for different experiments, and the most appropriate method can be selected according to the specific experimental purpose.

1) **Thin-layer gel method:** the matrigel forms a gel with a thickness of approximately 0.5 mm, and the cells are spread on the thin-layer gel for culture. This method is primarily suited to cell attachment and proliferation, such as in blood vessel formation experiments.
   a. Thaw the matrigel on ice one day in advance and place it in the refrigerator at 4 °C overnight. Following thawing, the vials can be vortexed, or a pre-cooled pipette/pipette tip can be used to mix the matrigel by slight blowing until it is homogeneous.
   b. The plate should be placed on ice, and the matrigel added to the growth surface at a 50 μL/cm² concentration.
   c. The plate should be incubated at 37 °C for 30 minutes to allow the matrigel to cure.
   d. (Optional) It is recommended that unbound material be aspirated before gentle rinsing with serum-free medium, with particular attention paid to ensuring that the pipette tip does not scratch the coated surface.
2) **Thick-layer gel method:** the matrigel forms a gel with a thickness of approximately 1-2 mm, and the cells grow within the gel. This method is primarily suited to 3D organoid culture and other related experiments.
   a. Place the matrigel on ice one day in advance and thaw it in the refrigerator at 4 °C overnight. Following thawing, the matrigel can be mixed by vortexing the vials or utilizing pre-cooled pipettes and pipette tips, which should be blown slightly to ensure a homogeneous mixture.
   b. Transfer the culture plate to ice. The cells are then added to the matrigel and suspended using a pre-cooled pipette. The mixed matrigel should be added to the growth surface at 150-200

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μL/cm² concentration.

c. The plate should be incubated at 37 °C for 30 minutes to allow the matrigel to cure.

d. The medium can be replenished according to the experimental requirements, while the method also allows for the culture of cells on top of the gel.

3) **Thin-layer encapsulation method:** A lower concentration of matrigel should be used to form a mixed protein encapsulation layer without forming a gel, and the cells should be spread on this thin layer for culture. This method is primarily suited to cell adhesion experiments, although it can also be employed in studies of tumor cell invasion in vitro.

a. The matrigel should be placed on ice one day in advance and thawed in the refrigerator at 4 °C overnight. Once thawed, the vial can be vortexed, or a pre-cooled pipette/pipette tip can be used to mix the matrigel until it is homogeneous by blowing it slightly.

b. The matrigel should be diluted to the desired concentration using a pre-cooled serum-free medium or PBS.

c. The diluted matrigel should then be added to the coated vessel, with the quantity added sufficient to cover the entire growth surface. The vessel should then be incubated at room temperature for 1-2 hours, depending on the time required for the matrix gel to solidify.

d. The unbound material should be aspirated, and the vessel rinsed gently with serum-free medium prior to use, ensuring that the pipette tip does not scratch the coated surface.

Note

1. This product is shipped in dry ice, which is a white or yellowish solid before thawing. If there is no dry ice in the foam box when it arrives and the product is in a gel state, it is advisable to contact us as soon as possible.

2. If the product is not in use, it is recommended to be stored at a temperature of -20 ℃ or below to prevent it from being exposed to light. It is also advisable that the product not be stored in a frost-free refrigerator.

3. It is not advisable to freeze or thaw this product repeatedly. In order to guarantee the efficacy of the product, it must be dispensed in accordance with the experimental specifications following the initial thawing.

4. It should be noted that this product is sterile and must be dispensed and used in a sterile environment.

5. The product is readily gelatinized; therefore, it is advisable to avoid direct contact with the bottle while taking the product to prevent the solidification of the product due to the body temperature. Furthermore, it is essential to ensure that the pipette tips, petri dishes, culture plates, and culture medium in direct contact with the product are pre-cooled or frozen in advance.

6. It is imperative that the product be kept on ice throughout the entirety of the experiment. Should the product solidify, it is no longer fit for purpose and cannot be used further.

7. It is recommended that the remaining matrigel not be retained for subsequent use after the experiment.

Research Use Only

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