

Geltrex® hESC-qualified Ready-To-Use Reduced Growth Factor Basement Membrane Matrix

Description

Basement membranes are continuous sheets of specialized extracellular matrices that form an interface between endothelial, epithelial, muscle, or neuronal cells and their adjacent stroma. Geltrex® matrix is a soluble form of basement membrane purified from the Engelbreth-Holm-Swarm (EHS) tumor. The extract gels at 37°C to form a reconstituted basement membrane. The major components of the Basement Membrane Matrix include laminin, collagen IV, entactin, and heparin sulfate proteoglycan. Geltrex® matrix is used routinely for attachment and maintenance of human embryonic stem cells (hESCs). Human ESCs have specific needs and some lots may not support hESC propagation. Geltrex® hESC-qualified Ready-to-Use Reduced Growth Factor Basement Membrane Matrix has been tested to support hESC growth and pluripotency, therefore eliminating the need for customers to test multiple lots.

Product	Catalog No.	Amount	Storage	Shelf Life*
Geltrex® hESC-qualified Ready-To-Use Reduced Growth Factor Basement Membrane Matrix	A15696-01	50 mL	Store at 2°C to 8°C. Protect from light.	12 months

* Shelf Life duration is determined from Date of Manufacture.

Product Use

For Research Use Only. Not for use in diagnostic procedures.

Important Information

- **Source:** Murine Engelbreth-Holm-Swarm (EHS) tumor.
- **Concentration:** Protein concentration ranges from 0.12–0.18 mg/mL. Refer to certificate of analysis for specific lot information.
- **Precautions:** Geltrex® Ready-to-Use matrix will begin to gel if kept above 15°C for extended periods of time. Remove the necessary volume for use and store the remainder at 2–8°C promptly. Since smaller volumes warm more quickly, partial tubes and aliquots should be kept on ice during use to prevent premature gelling. *Do not freeze.*
- Formulated without phenol red to minimize potential for estrogen-like effects.

Safety Information

Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves.

Coating Procedure for Propagation of hESC

Important: We recommend that the following procedures be performed in an aseptic environment using aseptic techniques to prevent contamination.

1. Add a sufficient amount of Geltrex® Ready-To-Use matrix to cover the entire growth surface area (see Table 1 for recommended volumes). We do not recommend diluting the product any further prior to this step. *It is critical to maintain a working temperature of 2–8°C by placing the Geltrex® matrix solution on ice to avoid premature gelling.*
2. Incubate the coated vessel at 37°C for a minimum of 60 minutes.
3. The coated vessel is stable for at least 1 week when stored at 2–8°C and sealed with Parafilm® laboratory film. *Do not allow coated surface to dry out.*
4. At the time of use, *we recommend keeping the vessels at room temperature for one hour before aspirating.* Carefully aspirate off the liquid layer above the Geltrex® coating and immediately plate the cells in pre-equilibrated cell culture medium.

Table 1 Reagent Volumes (in mL per well or per dish)

Culture vessel (approx. surface area)	Geltrex® Ready-To-Use matrix
6-well (10 cm ² /well)	1.5 mL
12-well (4 cm ² /well)	0.6 mL
24-well (2 cm ² /well)	0.3 mL
35-mm (10 cm ²)	1.5 mL
60-mm (20 cm ²)	3 mL
100-mm (60 cm ²)	6 mL
T-25 (25 cm ²)	3.75 mL
T-75 (75 cm ²)	11.25 mL

Lot Qualification

12-well cell culture plates are coated with each test lot of Geltrex[®] hESC-qualified Ready-To-Use Matrix. hESCs are grown on coated control and test plates in StemPro[®] hESC SFM and are monitored for expansion (see Figure 1). hESC negative control is grown with retinoic acid to induce differentiation, and is used as an internal PCR control (see Figure 2). After the completion of the hESC Growth Assay, the test and control samples are assessed by PCR Analysis (see Figure 3).

Figure 1 hESC Control

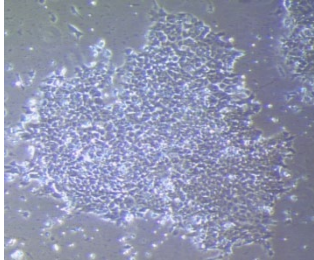


Figure 2 hESC Negative Control

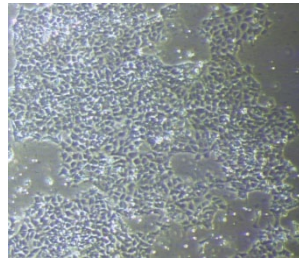
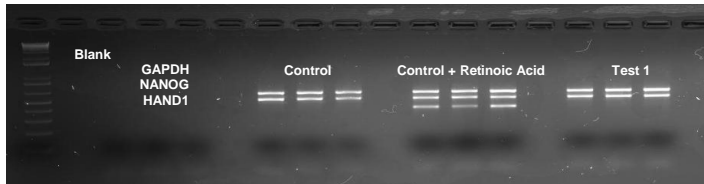


Figure 3 PCR Analysis



Related Products

Product	Cat. No.
StemPro [®] hESC SFM	A1000701
UltraPure [™] 0.5M EDTA, pH 8.0	15575
TrypLE [™] Select (1X), liquid, no Phenol Red	A12563
KnockOut [™] Serum Replacement	10828
GlutaMAX [™] -I (100X)	35050
StemPro [®] EZPassage [™] Disposable Stem Cell Passaging Tool	23181-010
StemPro [®] EZChek [™] Human Tri-Lineage Multiplex PCR Kit	23191-050

Explanation of Symbols and Warnings

The symbols present on the product label are explained below:

Use By:	Manufacturer	Consult instructions for use	Catalog number	Protect from light
Temperature Limitation	Batch code	Caution, consult accompanying documents	Sterilized using aseptic processing techniques	Read safety data sheet

Limited Product Warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at www.lifetechnologies.com/termsandconditions. If you have any questions, please contact Life Technologies at www.lifetechnologies.com/support.

References

- Fridman, R., M. Kibbey, L. Royce, M. Zain, T. Sweeney, D. Jicha, J. Yannelli, G. Martin, and H. Kleinman. 1991. Enhanced tumor growth of both primary and established human and murine tumor cells in athymic mice after co-injection with matrigel. *J. Natl. Cancer Inst.* 83:769–774.
- Fridman, R., T. Sweeney, M. Zain, G. Martin, and H. Kleinman. 1992. Malignant transformation of NIH-3T3 cells after subcutaneous co-injection with a reconstituted basement membrane (matrigel). *Int. J. Cancer* 51:740–744.
- Pone, M., M. Nomizu, M. Delgado, Y. Kuratomi, M. Hoffman, S. Powell, Y. Yamada, H. Kleinman, and K. Malinda. 1999. Identification of endothelial cell binding sites on the laminin γ chain. *Circ. Res.* 84:688–694.

For additional technical information such as Safety Data Sheets (SDS), Certificates of Analysis, visit www.lifetechnologies.com/support.

For further assistance, email techsupport@lifetech.com

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