

Geltrex™ Flex LDEV-Free, hESC Qualified, Reduced Growth Factor Basement Membrane Matrix

Catalog Numbers A4000046801, A4000046802, A4000046803

Pub. No. MAN1000814 Rev. A



WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from [thermofisher.com/support](https://www.thermofisher.com/support).

Product description

Gibco™ Geltrex™ Flex LDEV-Free, hESC Qualified, Reduced Growth Factor Basement Membrane Matrix (Geltrex™ Flex Matrix) is a soluble form of basement membrane that is purified from Engelbreth-Holm-Swarm (EHS) tumor cells.

Routinely used for attachment and maintenance of human embryonic stem cells (hESC) and induced pluripotent stem cells (iPSC), every lot of Geltrex™ Flex LDEV-Free, hESC Qualified, Reduced Growth Factor Basement Membrane Matrix is quality control tested using hESCs and iPSCs to ensure support of stem cell culture. For neural induction of human embryonic stem cell (hESC) and induced pluripotent stem cells (iPSC) protocol, see *Induction of Neural Stem Cells from Human Pluripotent User Guide* (Pub. No. [MAN0008031](#)).

The major components of Geltrex™ Flex Matrix include laminin, collagen IV, entactin, and heparan sulfate proteoglycan. The solution is formulated without phenol red to minimize the potential for estrogen-like effects.

For the culture of primary cells, such as epithelial cells, endothelial cells, smooth muscle cells, angiogenesis assays, neurite outgrowth assays, or bile canaliculi formation assays with polarized hepatocytes, standard Geltrex™ Flex LDEV-Free Reduced Growth Factor Basement Membrane Matrix can be used. See *Geltrex™ Flex LDEV-Free Reduced Growth Factor Basement Membrane Matrix User Guide* (Pub. No. [MAN1000812](#)).

For the culture of tumoroids and other organoids, Geltrex™ Flex LDEV-Free, Organoid Qualified, Reduced Growth Factor Basement Membrane Matrix is recommended. See *Geltrex™ Flex LDEV-Free, Organoid Qualified, Reduced Growth Factor Basement Membrane Matrix User Guide* (Pub. No. [MAN1000813](#)).

Contents and storage

Component	Cat. No.	Amount	Storage	Shelf Life ^[1]
Geltrex™ Flex LDEV-Free, hESC Qualified, Reduced Growth Factor Basement Membrane Matrix	A4000046801	1 mL	-80°C to -20°C	24 months
	A4000046802	5 mL		
	A4000046803	10 mL		

^[1] Shelf life duration is determined from the date of manufacture.

Recommended methods for specific applications

Geltrex™ Flex Matrix can be used for various applications that require different basement membrane thicknesses and concentrations. Geltrex™ Flex Matrix comes at lot specific protein concentrations between 9–13 mg/mL.

- For applications such as propagation of primary cells or hESC/iPSC that only need a protein layer, the thin layer method should be used. See “Coat the growth surface: thin layer method for propagation of hESC/iPSC” on page 2.

Procedural guidelines

- Perform all procedures in an aseptic environment, using aseptic techniques, to prevent contamination.
- Source—Murine Engelbreth-Holm-Swarm (EHS) tumor (protein concentration ranges from 9–13 mg/mL). See the Certificate of Analysis for lot-specific information.

- When working with small volumes of Geltrex™ Flex Matrix, dispense the required working volumes, then aliquot and store the remaining solution at -80°C to -20°C in a frost-free freezer.
- Avoid multiple freeze/thaw cycles.
- Geltrex™ Flex Matrix gels in 5–10 minutes when kept above 15°C. Keep Geltrex™ Flex Matrix on ice at all times during handling to prevent premature gelling.
- It is recommended to use Geltrex™ Flex Matrix within a week (7 days) from the time of thawing at 2°C to 8°C.

Before you begin



1. Thaw Geltrex™ Flex Matrix in a refrigerator overnight at 2°C to 8°C.
Consider using an aluminum or other cooling block to reduce temperature fluctuations.
2. Mix Geltrex™ Flex Matrix by slowly pipetting up and down. Be careful not to introduce air bubbles.

Coating method

Coat the growth surface: thin layer method for propagation of hESC/iPSC



Note: For hESC/iPSC culture, StemFlex™ Medium is recommended but not required.

1. Dilute 1 mL of Geltrex™ Flex Matrix into 99 mL of pre-chilled (4°C) DMEM/F-12 Medium (1% final concentration). Determine the optimal coating concentration for the application empirically. If needed, adjust volumes appropriately.
2. Add sufficient diluted Geltrex™ Flex Matrix to cover the entire growth surface area. For example, add 1.5 mL for a 35-mm dish, or 3 mL for a 60-mm dish.
3. Incubate the coated plates at 37°C for a minimum of 60 minutes to 24 hrs before using.
4. Use Geltrex™ Flex Matrix-coated plates within 24 hrs if possible.
If not, coated plates can be stored at 2°C to 8°C for two weeks with a layer of serum-free medium. Seal the plate with Parafilm™ sealing film to prevent evaporation and compromised sterility.
5. Immediately before plating cells, aspirate Geltrex™ Flex Matrix from the wells and discard.
Note: Do not allow the culture surface to dry out.
6. Add the PSC cell suspension to the Geltrex™ Flex Matrix-coated plate using pre-equilibrated cell culture medium, such as StemFlex™ Medium.

Recommendations for analysis

- Cells can be analyzed in the plate on Geltrex™ Flex Matrix. Alternatively, cells can be carefully transferred to a microscope slide, or embedded in paraffin, then sectioned.
- To fix cells, incubate in 2% formalin in PBS (1X) at room temperature for 20 minutes.
- To fix cells embedded in Geltrex™ Flex Matrix, incubate in 4% formaldehyde plus 1% glutaraldehyde in PBS for 30 minutes to prevent matrix dissolution.

Related products

Unless otherwise indicated, all materials are available through [thermofisher.com](https://www.thermofisher.com).

Item	Source
Geltrex™ Flex LDEV-Free Reduced Growth Factor Basement Membrane Matrix (1 mL, 5 mL, 10 mL)	A4000046701 , A4000046702 , A4000046703
Geltrex™ Flex LDEV-Free, Organoid Qualified, Reduced Growth Factor Basement Membrane Matrix (1 mL, 5 mL, 10 mL)	A4000046901 , A4000046902 , A4000046903
StemFlex™ Medium	A3349401
Essential 8™ Medium	A1517001
DMEM/F-12 Medium	11320033
Essential 8™ Flex Medium	A2858501
PSC Neural Induction Medium	A1647801
StemPro™ Accutase™ Cell Dissociation Reagent	A1110501
DPBS, no calcium, no magnesium	14190144
TrypLE™ Express Enzyme (1X), no phenol red	12604013
Versene Solution	15040066

Limited product warranty

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For descriptions of symbols on product labels or product documents, go to [thermofisher.com/symbols-definition](https://www.thermofisher.com/symbols-definition).

Revision history: Pub. No. MAN1000814 A

Revision	Date	Description
A	21 March 2025	Initial release.

The information in this guide is subject to change without notice.

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