Substrate for cell culture

# perLAM-521

Manual ver. 0.6[2026.2.25]

Product No. 101 521　　350 μg
Product No. 101 522　　1,050 μg

## Product Overview

perLAM-521 is a recombinant cell adhesion substrate consisting of Laminin-521 E8 fragment conjugated with Perlecan Domain I.
The Laminin E8 fragment mediates integrin binding, while the Perlecan Domain I carries heparan sulfate chains that exhibit affinity for growth factors, particularly basic fibroblast growth factor (bFGF). Captured growth factors are efficiently presented to their cognate receptors.
When applied as a coating on culture surfaces, perLAM-521 supports proliferation of human induced pluripotent stem (hiPS) cells and enhances their differentiation efficiency into ectodermal cells or mesodermal cells. It may also be beneficial for the culture of other cell types that adhere to Laminin-521. Optimal coating concentrations depend on the cell type, cell line, and specific experimental application.

## Specifications / Details

**Contents:** Laminin-521 E8 fragment protein conjugated to Perlecan Domain I
**Solvent:** 20 mM phosphate buffer + 0.5 M NaCl (pH 6.8-7.2)
**Form:** Liquid
**Host cells:** CHO-S cells
**Content:** 175 μg / 350 μL / tube
　Product No. 101521:　350 μg / 2 tubes
　Product No. 101522: 1,050 μg / 6 tubes
**Concentration:** 0.5 mg/mL
**Storage:** Store in a freezer (< -20℃). After thawing, keep refrigerated (< 15℃) and use within 6 months.
　Up to 6 months : < 15℃
　Up to 3 years　: < -20℃
Avoid more than 5 freeze-thaw cycles. Thaw at room temperature.
**Expiration:** Shelf life is 3 years when unopened and stored frozen. The expiration date is indicated on the outer box. Please store under the above conditions and use within the expiration period.
**Activity:**
・Binding activity to human integrin α6β1, with a dissociation constant of 10 nM or less.
・Binding activity to bFGF, with a dissociation constant of 5 nM or less.

## Usage

perLAM-521 should be coated onto the culture vessel at an appropriate concentration. The coating concentration and amount to be applied vary depending on the cell type, cell line, medium, and purpose. Please optimize within the range of 0.25-1.0 μg/cm². If optimization is insufficient, cells may detach, or conversely, become difficult to detach during passaging.

**Pre-coating method (Maintenance, expansion culture, and differentiation induction of ES, iPS, MSC, etc.)**

1. Dilute perLAM-521 with PBS(-). Perform the dilution immediately before coating.
(For coating at 0.25 μg/cm², in a 6-well plate with a surface area of 9.6 cm² per well, dilute 4.8 μL of perLAM-521 with PBS(-) to 1.5 mL per well for coating.)
2. Incubate the culture vessel containing the diluted perLAM-521 under one of the following conditions: 1 hour at 37℃, 3 hours at room temperature, or overnight at 4℃. Take care not to allow the coated surface to dry.
3. After aspirating and removing the coating solution, promptly seed cells. Take care not to allow the coated surface to dry.
4. Add stem cell medium of your choice.

**Pre-mix method (Maintenance, expansion culture)**

1. Add perLAM-521 to the cell suspension to be seeded.
(For 0.125 μg/cm² in a 6-well plate with a surface area of 9.6 cm² per well, add 2.4 μL of perLAM-521 to 2 mL of the cell suspension per well.)
2. Dispense the cell suspension containing perLAM-521 into the culture vessel and culture the cells. A medium change is not required until the following day.
4. Add stem cell medium of your choice.
** If issues such as difficulty detaching cells at passaging occur, review conditions (e.g., lower the perLAM-521 coating concentration).*

**EDTA dissociation method (applicable to ES/iPS cells)**

1. Confirm cells are 80-90% confluent and aspirate the medium.
2. Wash twice with 5 mM EDTA/PBS(-) at 2 mL per well.
3. Treat with 5 mM EDTA/PBS(-) at 1 mL per well, 37 ° C for 10-15 minutes.
4. Aspirate the 5 mM EDTA/PBS(-).
5. Add 1 mL per well of medium containing Y27632 and detach/disperse to single cells by pipetting 5-10 times.
** Adjust the incubation time as appropriate while monitoring cell condition.*

## Precautions

1. For research use only. Not for use in humans.
2. In case of accidental ingestion or contact with eyes, rinse immediately with water and seek medical attention.
3. Not for diagnostic use.
4. Use with polystyrene (PS) culture ware that has been surface-treated for cell culture.
5. Avoid drying of the perLAM coated surface, as protein inactivation will occur upon drying.

## Note:

For assistance with calculating the appropriate perLAM coating or pre-mix volume for your culture vessel and surface area, please refer to the **perLAM Calculator** available on our website.

## Product Information

The latest information on this product, including publications and Q&A, is available on the Matrixome, Inc. website and is updated regularly. Please check via the URL or QR code below.

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