

# Corning® rLaminin-521 (Human)

CORNING

Corning has partnered with BioLamina of Sweden for the supply of recombinant human laminin-521. Corning rLaminin-521 (Human) is a heterotrimer composed of  $\alpha 5$ ,  $\beta 2$ , and  $\gamma 1$  chains expressed in a mammalian cell culture system. rLaminin-521 (Human) supports long-term self-renewal of human pluripotent stem cells (hPSC), including embryonic stem cells (hESC) and induced pluripotent stem cells (iPSC) in defined and xeno-free environments. rLaminin-521 provides additional benefits, including ROCK inhibitor independent single cell expansion of PSCs, which improves hPSC culture ease and efficiency.

## Features

- ▶ Recombinant protein
- ▶ Easy to self-coat
- ▶ Available in 0.1 mg aliquots for easy handling
- ▶ Compatible with multiple hPSC culture media and dissociation reagents
- ▶ Supports undifferentiated expansion of hPSC
- ▶ Suitable for xeno-free, defined culture environment

New!

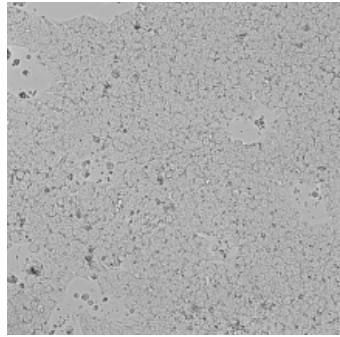


## Human Pluripotent Stem Cell Culture (hPSC)

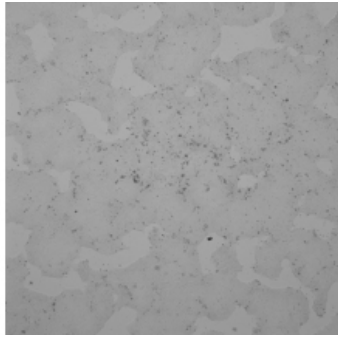
hPSC, including embryonic stem cells and induced pluripotent cells, exhibit unlimited self-renewal capability and differentiation potential. These cells can give rise to the majority of cell types in the body and can be a source of cells and tissues for regenerative medicine. hPSC-derived cells can also be used as a model for drug screening. Typically feeder-free hPSC culture is performed using clump passage, as single cell culture requires the addition of ROCK inhibitor in the media. Long term effects of using these chemicals are unknown. Clump passage methodology is uncontrolled and not convenient to scale-up.

### Morphology

hESC cultured on rLaminin-521 (Human) in xeno-free medium exhibited characteristic colony morphology with a high nuclear-to-cytoplasm ratio.



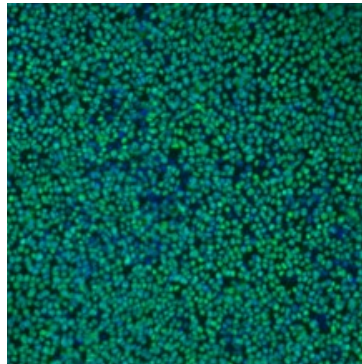
20x magnification



10x magnification

### Marker Expression

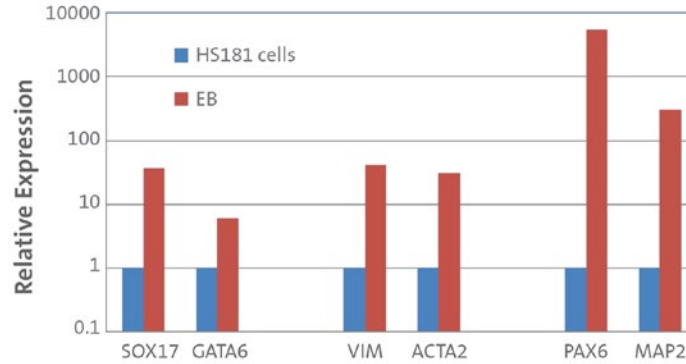
Markers for undifferentiated hPSC were determined by immunocytochemistry. Image analysis indicates Oct-4 (green) expression in the cells. Nuclei were stained with DAPI (blue).



Oct-4 + DAPI

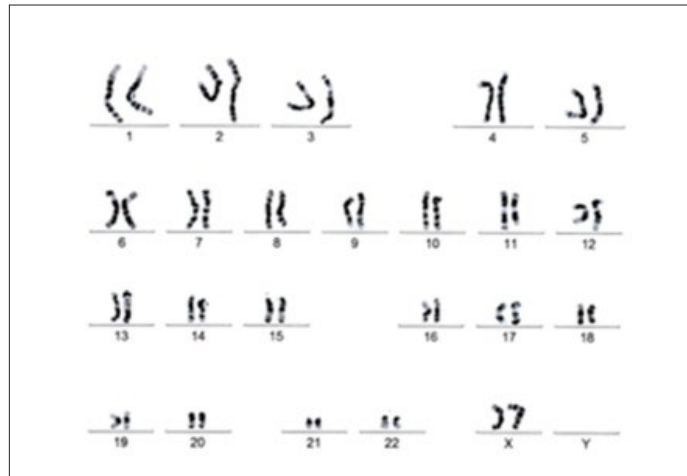
### Tri-Lineage Differentiation

After 10 passages in xeno-free medium, pluripotency of hESC were assessed by differentiation into embryoid bodies (EBs) and quantification of lineage-specific markers in EBs by quantitative RT PCR. Markers from all 3 lineages were expressed in EBs, which demonstrated that the cells maintained pluripotency after multiple passages.



### Karyotype Analysis

hESC cultured on rLaminin-521 (Human) in xeno-free medium maintained normal karyotype. Karyotyping was performed at multiple times during the expansion of the cells.



### hPSC Lines, Media, and Dissociation Reagents Evaluated on rLaminin-521 (Human)

Cells	Human Embryonic Stem Cells, Human Induced Pluripotent Stem Cells
Media	mTeSR™1 <sup>2</sup> , TeSR™2 <sup>2</sup> , Essential E8 <sup>1</sup> , NutriStem™ XF/FF <sup>1,2</sup>
Dissociation reagents	TrypLE™ Select <sup>2</sup> , EDTA <sup>1</sup> , Trypsin/EDTA <sup>2</sup>

<sup>1</sup> Lu, et al., (2014). A defined xeno-free and feeder-free culture system for the derivation, expansion and direct differentiation of transgene-free patient-specific induced pluripotent stem cells. *Biomaterials* 35:2816.

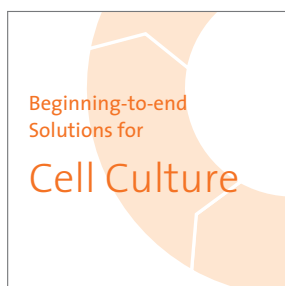
<sup>2</sup> Rodin, et al., (2014). Clonal culturing of human embryonic stem cells on laminin-521/E-cadherin matrix in defined and xeno-free environment. *Nature Communications* 5:3195.

## Ordering Information

### Corning® rLaminin-521 (Human)

Cat. No.	Description	Qty/Pk	Qty/Cs
354220	20 µg vial	1	1
354221	100 µg vial	1	1
354222	1 mg (10 x 100 µg vials)	1	1
354223	5 mg (50 x 100 µg vials)	1	1

**Warranty/Disclaimer:** Unless otherwise specified, all products are for research use only. Not intended for use in diagnostic or therapeutic procedures. Not for use in humans. Corning Life Sciences makes no claims regarding the performance of these products for clinical or diagnostic applications.



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