

## Xeno-free Recombinant Human Laminin for ES/iPS Cell Culture

### Overview

Matrixome®'s iMatrix-511 is a xeno-free recombinant human laminin-511 E8 fragment substrate for the maintenance and expansion of embryonic stem cells (ES) and induced pluripotent stem cells (iPS). Laminins, glycoproteins of the extracellular matrix (ECM), are a major component of the basement membrane and vital in modulating cellular functions for survival, cell adhesion, and proliferation.

### Key Benefits

#### Promotes high efficiency reprogramming across multiple cell types

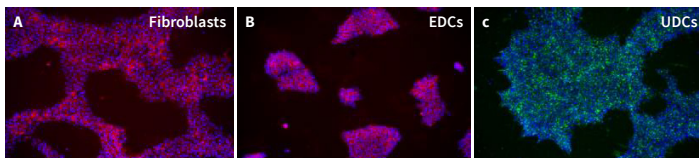
iMatrix-511, in combination with Stemgent's new StemRNA™-3rd Gen Reprogramming Kit (00-0076), is ideal for promoting high reprogramming efficiencies of human fibroblasts, blood-derived endothelial progenitor cells (EPCs) and urine-derived epithelial cells (UDCs) into iPS cells (**Figure 1**).

#### REPROCELL's additional quality control provides assurance that each lot of iMatrix-511 performs consistently

REPROCELL performs added quality control to each lot of iMatrix-511 on iPS cells, testing for pluripotency and colony morphology over multiple passages. This testing provides assurance each lot of iMatrix-511 has a high level of functional performance and consistently generates healthy, pluripotent iPS cell colonies (**Figure 2**).

#### Xeno-free, GMP-compliant substrate extends protocols to produce clinically-relevant stem cell lines

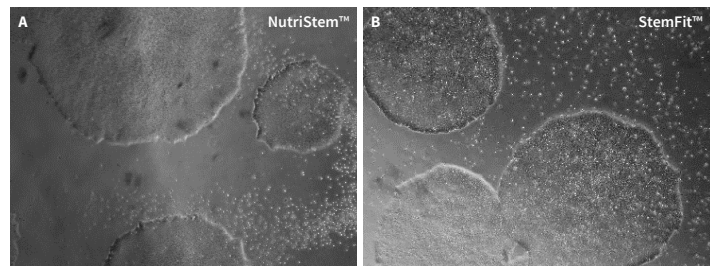
Using a xeno-free substrate moves researchers one step closer to producing clinically-relevant iPS cells to support translational research.



**Figure 1. iPS cells cultured on iMatrix-511. iPSC cells were derived from:**

- A:** Fibroblasts
- B:** EPCs
- C:** UDCs

RNA-iPS cell lines derived from three cell types using the Stemgent StemRNA-NM Reprogramming Kit (Cat. No. 00-0076). Cultures were stained with Stemgent StainAlive™ TRA-1-60 Antibody (Cat. No. 09-0068) to verify pluripotency.



**Figure 2. iPS cells cultured on iMatrix-511.**

**A:** iPS cells derived from urine using the StemRNA-NM Reprogramming Kit (Cat. No. 00-0076) were cultured on iMatrix-511 in NutriStem™ XF/FF Culture Medium (Cat. No. 01-0005) for 7 passages.

**B:** RC010 iPS cells, created from EPCs using the Stemgent StemRNA-SR Reprogramming Kit (Cat. No. 00-0075) were cultured in StemFit™ Basic Cell Culture Medium. Magnification: 4x.

### Reference

Miyazaki T; Futaka S; Suemori H; Taniguchi Y; Yamada M; Kawasaki M; Hayashi M; Kumagai H; Nakatsuji N; Sekiguchi K; Kawase E. "Laminin E8 fragments support efficient adhesion and expansion of dissociated human pluripotent stem cells." *Nature Commun* 3:1236 (2012).

## Product Ordering Information

### iMatrix-511 Cell Culture Substrate

Product Name	Quantity	Cat. No.
iMatrix-511	350 µg (2 x 175 µg) 1050 µg (6 x 175 µg)	NP892-011 NP892-012

### Related Reprogramming Reagents

Product Name	Quantity	Cat. No.
Stemgent StemRNA-NM Reprogramming Kit	1 Kit, 3 components	00-0076
Stemgent StemRNA-SR Reprogramming Kit	1 Kit, 3 components	00-0075
NutriStem™ XF/FF Culture Medium	500 mL	01-0005
FGF-basic, Human Recombinant	50 µg	03-0002*
StainAlive™ TRA-1-60 Antibody (DyLight™ 488), mouse anti-human	100 µL	09-0068
StainAlive™ TRA-1-81 Antibody (DyLight™ 488), mouse anti-human	100 µL	09-0069
StainAlive™ SSEA-5 Antibody (DyLight™ 550), mouse anti-human	100 µL	09-0097
nGFP mRNA	20 µg	05-0019
eGFPmRNA	20 µg	05-0020

## Services

REPROCELL's custom iPS cell line generation, expansion and differentiation, and tissue procurement services provide researchers a customized, integration-free iPS cell source, while allowing them to focus on their core technologies.

REPROCELL also provides customized on-site or in-house training in iPSC reprogramming, differentiation and related technical questions, allowing researchers to get up to speed quickly with RNA-based reprogramming technologies.

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