



# Best cell culture substrate for iPS / ES cells!

## iMatrix-511

iMatrix-511, is the recombinant human Laminin-511 E8 fragment, produced by CHO-S cells and it can reduce the risk of xeno-components contamination in the cell culture. iMatrix-511 is very useful for iPS / ES cells as cell culture substrate.

- Optimized for ES / iPS cell culture
- High cell viability
- No risk of xeno-component contamination
- Feeder-free
- Easy to use



### Background

Laminin is one of the extra cellular matrices (ECMs) located in the basement membrane of animals, and plays an important role for cell adhesion and proliferation.

Laminin is composed of three chains;  $\alpha$ -,  $\beta$ -, and  $\gamma$ - chain and 15 types of laminin are already known. Among them, Laminin composed of  $\alpha 5$ -chain,  $\beta 1$ -chain, and  $\gamma 1$ -chain, is called "Laminin-511". Laminin-511 is recognized by  $\alpha 6 \beta 1$  integrin. Cell adhesion, extension and proliferation are caused by many cell signaling through integrin.

Laminin-511 E8 is the fragment of Laminin-511 obtained by enzymatic digestion. This laminin fragment also has binding capability to  $\alpha 6 \beta 1$  integrin.

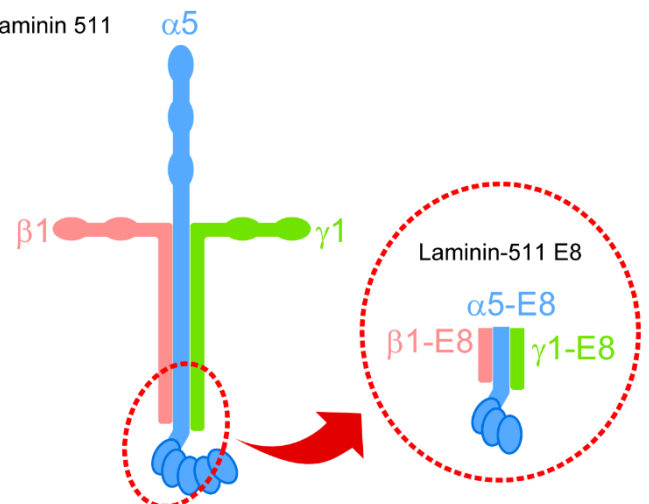
### Fragments of laminin

$\alpha$ -Chain (5 types)     $\alpha 1$     $\alpha 2$     $\alpha 3$     $\alpha 4$     $\alpha 5$

$\beta$ -Chain (3 types)     $\beta 1$     $\beta 2$     $\beta 3$

$\gamma$ -Chain (3 types)     $\gamma 1$     $\gamma 2$     $\gamma 3$

Laminin 511



According to Miyazaki's report (*Nat. Commun.*, 3, 1236 (2012)), Laminin-511 E8 can be used for cell culture of ES / iPS cells.

## Procedure

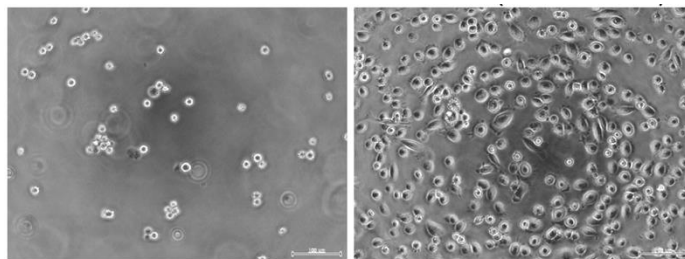
- 1) Dilute the solution with sterile PBS(-). Coat dishes with 0.5 µg/cm<sup>2</sup>.
  - \* The optimum coating concentration depends on cell lines.
  - \*\* For example, when you use 6-well plate (9.6 cm<sup>2</sup>/well), add 9.6 µL iMatrix-511 (4.8 µg) in 1.99 mL PBS(-). Add 2 mL of diluted iMatrix-511 solution to the well.
- 2) Incubate for 1h at 37°C, 3h at room temperature or overnight at 4°C.
- 3) Remove excess fluid from the coated surface. No rinse is required.
- 4) Immediately plate the cells at desired density.
  - \* Keep from drying out the plate after coated.

## How effective?

### (A) Epidermal Cells, 0.5 h culture

Non-coat

iMatrix-511



### (B) Vascular Endothelial Cells, 1.0 h culture

Non-coat

iMatrix-511

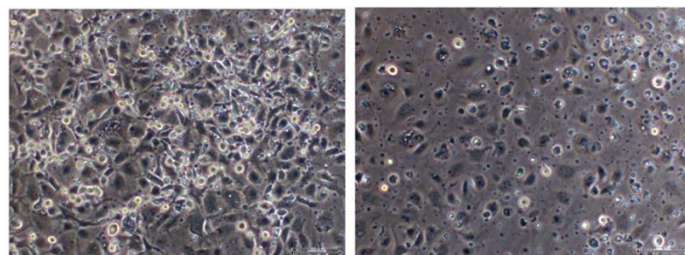


Fig. Human Epidermal Cells (A) and Vascular Endothelial Cells (B) were cultured on iMatrix-511. More efficient adhesion and extension can be observed when cultured on iMatrix-511.

## FAQ

Can I use iMatrix-511 for any cells other than iPS / ES cells?

- Yes you can! iMatrix-511 can be used for various cell types.

## References

- Miner, JH., *et al.*, *Annu. Rev. Cell Dev. Biol.*, 20, 255-284 (2004).  
 Ido, H., *et al.*, *J. Biol. Chem.*, 279, 10946-10954 (2004).  
 Ido, H., *et al.*, *J. Biol. Chem.*, 282, 11144-11154 (2007).  
 Taniguchi, Y., *et al.*, *J. Biol. Chem.*, 284, 7820-7831 (2009).  
 Miyazaki, T., *et al.*, *Nat. Commun.*, 3, 1236 (2012).  
 Doi, D., *et al.*, *Stem Cell Rep.*, 2, 337-350 (2014).  
 Nakagawa, M., *et al.*, *Sci Rep.*, 8, 3594 (2014).  
 Okumura N., *et al.*, *Invest Ophthalmol Vis Sci.*, 56 (5), 2933-42 (2015).

## Ordering Information

[Manufacturer : NIP]

Product Name	Size	Product Code	Storage Condition
iMatrix-511 (0.5 mg / ml solution)	2 x 175 µg	892011	4°C
	6 x 175 µg	892012	4°C

### NOTE

- \* All products on here are for research use only, not for diagnostic use.
- \* Products might be changed for improvement without notice.

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- \* Please contact your local distributors for orders, quote request and any inquiry.

Your Local Distributor



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