

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.

- ES / iPS cell culture optimized matrix
- 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.

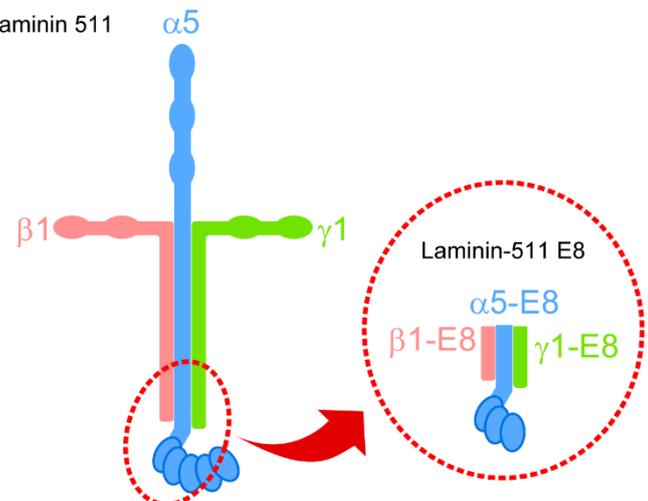
Laminin is composed of three chains; α -, β -, and γ - chain and 15 types of laminin are already known. Among them, Laminin composed of $\alpha 5$ -chain, $\beta 1$ -chain, and $\gamma 1$ -chain, is called "Laminin-511". Laminin-511 is recognized by $\alpha 6 \beta 1$ integrin. Cell adhesion, extension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

α -Chain (5 types)	$\alpha 1$	$\alpha 2$	$\alpha 3$	$\alpha 4$	$\alpha 5$
β -Chain (3 types)	$\beta 1$	$\beta 2$	$\beta 3$		
γ -Chain (3 types)	$\gamma 1$	$\gamma 2$	$\gamma 3$		

Laminin 511



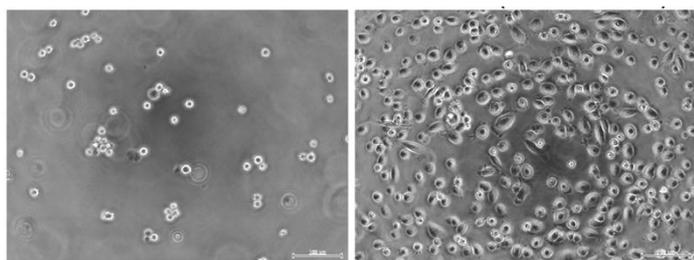
According to Miyazaki's report (*Nat. Commun.* 3, 1236 (2012)), Laminin-511 E8 can be used for cell culture of ES / iPS cells.

How effective?

(A) Epidermal Cells, 30 min culture

Non-coat

iMatrix-511



(B) Vascular Endothelial Cells, 60 min culture

Non-coat

iMatrix-511

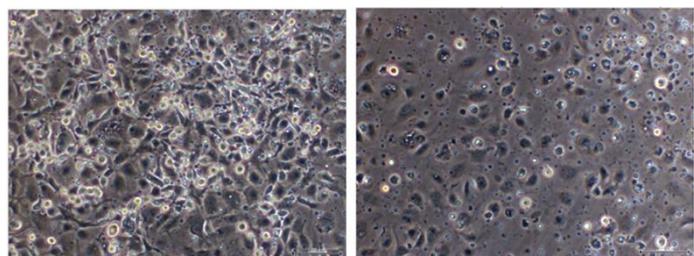


Fig. Human Epidermal Cells (A) and Vascular Endothelial Cells (B) were cultured on iMatrix-511. More efficient adhesion and extension can be observed when cultured on iMatrix-511.

Procedure

- 1) Add 350 μL of sterile tissue culture grade water to make 500 $\mu\text{g}/\text{mL}$ solution.
- 2) Dilute the solution with PBS(-). Coat dishes with 0.5 $\mu\text{g}/\text{cm}^2$.
 - * The optimum coating concentration depends on cell lines from 0.1 to 1.5 $\mu\text{g}/\text{cm}^2$.
 - ** For example, when you use 6-well plate (9.6 cm^2/well), add 10 μL iMatrix-511 (500 $\mu\text{g}/\text{mL}$) and 1.99 mL PBS(-) to each well (2.4 $\mu\text{g}/\text{mL}$, 2 mL/well).
- 3) Incubate for 3h at room temperature or overnight at 4 $^{\circ}\text{C}$.
- 4) Remove excess fluid from the coated surface.
- 5) Immediately plate the cells at desired density.
 - * Keep from drying out the plate after coated.

FAQ

- 1) 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.
- 2) How long is the reconstituted iMatrix-511 stable?
 - Reconstituted iMatrix-511 (0.5 $\mu\text{g}/\text{mL}$) is stable at 4 $^{\circ}\text{C}$ for 1 month.

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).

Ordering Information

Product Name	Size	Product Code	Storage Condition
iMatrix-511	2 x 175 μg	892001	4 $^{\circ}\text{C}$
	6 x 175 μg	892002	4 $^{\circ}\text{C}$

NOTE

- * Numbers after “#” represents product code.
- * 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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