ECMatrix™-411 E8 Laminin Substrate

Stem Cell Reagent

Cat. # CC162-1050UG

FOR RESEARCH USE ONLY.
NOT FOR USE IN DIAGNOSTIC PROCEDURES.
NOT FOR HUMAN OR ANIMAL CONSUMPTION.

Pack size: 1050 µg

Store at 2-8°C

Data Sheet

Description

Endothelial cells line the interior surface of blood and lymphatic vessels, forming an interface between circulating blood or lymph in the lumen and the rest of tissue or organ. Laminin-411 is known to bind to the integrin α6β1 which is located on the cell surface of pluripotent stem cells and is known to induce endothelial cell differentiation. Professor Kiyotoshi Sekiguchi's group (Matrixome, Inc.) have produced a recombinant E8 fragment of laminin-411 at large-scale while retaining the full integrin binding activity. ECMatrix™-411 E8 Laminin Substrates are recombinant Laminin-411-E8 fragments which bind to integrin α6β1 and increases the differnetiuation of pluripotent stem cells (ES/iPSCs) into acetyl-LDL$^+$/ CD31$^+$ endothelial cells.

Storage and Handling

ECMatrix™-411 E8 Laminin Substrates should be stored at 2-8°C. Avoid multiple freeze-thaw cycles and protect from light.

Presentation

1) 6 X 175 µg ECMatrix™-411 E8 Laminin Substrate (0.5 mg/mL in PBS). Expressed in CHO-S cells.

Quality Control Testing

- Purity (SDS-Page): > 95%
- Endotoxin Test: ≤ 750 EU/mg
- Mycoplasma Test: Negative
- Sterility Test: Negative
- Integrin Binding Assay (kDa): ≤ 10 nM

Protocol

Precoating Method

1. Dilute the 0.5 mg/mL stock solution with sterile PBS to achieve a 2.5 ug/mL working solution.
2. Coat dishes with ECMatrix™-411 at 0.25 ug/cm^2 (for example, for one well of a 6-well plate add 1 mL of the 2.5 ug/mL working solution).
3. Incubate for 1 hour at 37°C, 3 hours at room temperate or overnight at 4°C.
4. Before use, remove remaining fluid from the coated surface (do not rinse).
5. Detach cells into small clumps using Accutase.
6. Plate the cells at desired density.

Note: Do not allow the plates to dry, briefly spin down all liquids in the tube before use, avoid repeated freeze-thaw cycles.

References

1. Takayama K, et al. Laminin 411 and 511 promote the cholangiocyte differentiation of human induced pluripotent stem cells. Biochem Biophys Res Commun. 2016 May 20;474(1):91-96.

2. Ohta R, et al. Laminin-guided highly efficient endothelial commitment from human pluripotent stem cells. Sci Rep. 2016 Nov 2;6:35680.

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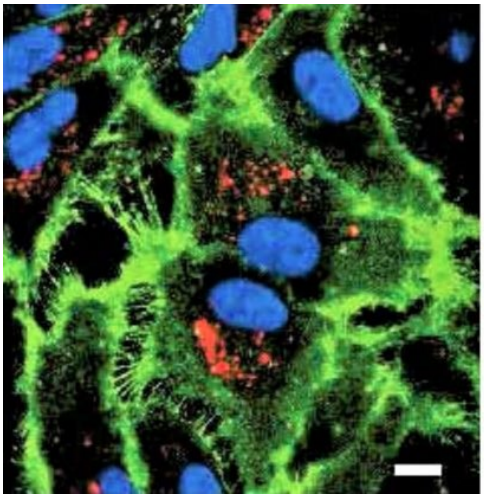
SPECIES LEGEND: **H** Human **Ca** Canine **M** Mouse **R** Rat **Rb** Rabbit **B** Bovine **P** Porcine **WR** Most Common Vertebrates

KhES-1 Human ES Cell Derived Endothelial Cells



253G4 Human ES Cell Derived Endothelial Cells

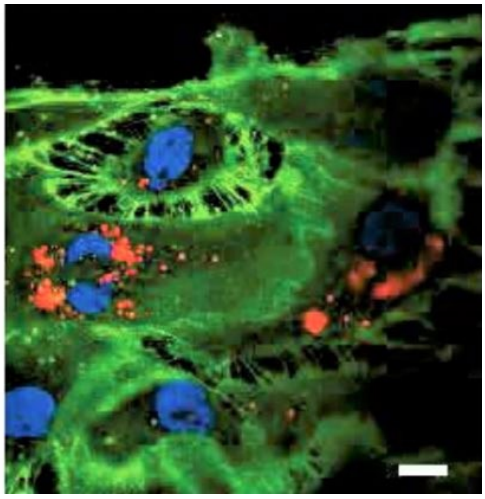


Figure 1. Differentiation of human embryonic stem cells into endothelial cells. Human ES cell lines (KhES-1, 253G4) differentiated into endothelial cells grown on ECMatrix™-411 E8 Laminin Substrates express acetyl-LDL (red) and CD31 (green). Cells counterstained with Dapi (blue).