

Recombinant Human Laminin-511 E8 Protein

Product Name

Recombinant Human Laminin-511 E8 Protein

Size / Catalog Number

100 μ g / TL766-0100

Product Information

Synonyms: LN511-E8, 511E8

Accession: UniProt O15230-1 & P07942-1 & P11047-1

Expressed Region: O15230-1(Ala2534-Pro3322) & P07942-1(Lue1561-Leu1786) & P11047-1(Asn83-Pro328)

Tag: 6 \times His-tag & Flag-tag

Expression system: HEK293 cells

Predicted Molecular weight: 86.7 kDa, 25.4 kDa, 28.4 kDa

Purity: > 90% as determined by SDS-PAGE

Endotoxin: < 0.1 EU per 1 μ g of protein (LAL method)

Activity: Determined by promoting the adhesion ability of hiPS cells, the ED₅₀ is ≤ 5 μ g/mL.

Form: Lyophilized from sterile PBS (pH7.4), typically supplemented with 6% mannitol as a protectant.

Background

Laminin-511 E8 is a recombinant truncated protein expressed in HEK-293 cells and purified via affinity chromatography, comprising the C-terminal domains of $\alpha 5$, $\beta 1$, and $\gamma 1$ chains while retaining full integrin-binding capacity. As a critical component of the basement membrane, Laminin-511 E8 provides structural support for pluripotent stem cells (PSCs) through its cell-binding motifs (e.g., integrin-binding sites), significantly enhancing cell adhesion, proliferation, and undifferentiated state maintenance. Studies demonstrate that compared to full-length Laminin-511 or traditional matrices (e.g., Matrigel), Laminin-511 E8 exhibits superior cell adhesion efficiency and supports long-term stable passaging (> 10 passages) of human embryonic stem cells (ESCs) and induced pluripotent stem cells (iPSCs) without karyotypic abnormalities. Its optimized design enables dual applications in pre-coating and direct suspension mixing methods, offering a defined and efficient solution for organoid culture and directed differentiation research.

Introductions

Laminin-511 E8 protein should be stored at a concentration no less than 0.5 mg/mL. Thaw at 4°C before use, with a recommended working concentration of 5 μ g/mL for iPSC culture. For example, when coating a 6-well plate, dilute the protein with DMEM/F12 medium, add 1mL of diluted protein solution to each well, and incubate at 37°C for 2 hours or 2-8°C overnight. Then aspirate and discard the Laminin-511 E8 solution, gently wash well with sterile DPBS, add the cells to be cultured.

Stability & Storage

Lyophilized powder: Stable for 12 months at -80°C or 6 months at -20°C when stored in the original sealed container under desiccant.

Reconstitution: Dissolve in sterile water for injection, 0.9% NaCl, or PBS (pH7.4), maintaining a final concentration $\geq 500 \mu\text{g/mL}$ to prevent adsorption.

Handling: Aliquot to avoid repeated freeze-thaw cycles.

References

1. Chen H, Liu Y, Gui Q, *et al.* Ghrelin attenuates myocardial fibrosis after acute myocardial infarction via inhibiting endothelial-to mesenchymal transition in rat model. *Peptides*. 2019 Jan;111:118-126.
2. Giraud T, Jeanneau C, Bergmann M, *et al.* Tricalcium Silicate Capping Materials Modulate Pulp Healing and Inflammatory Activity In Vitro. *J Endod*. 2018 Nov;44(11):1686-1691.
3. Jeong JH, Jang HJ, Kwak S, *et al.* Novel TGF- β 1 inhibitor antagonizes TGF- β 1-induced epithelial-mesenchymal transition in human A549 lung cancer cells. *J Cell Biochem*. 2019 Jan;120(1):977-987.

Intended Us

For research and manufacturing purposes only.