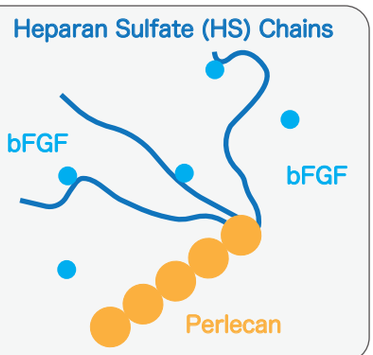
MATRIXOME

NEXT GENERATION ECM

perLAM: Perlecan - Conjugated Laminin E8

What is Perlecan?

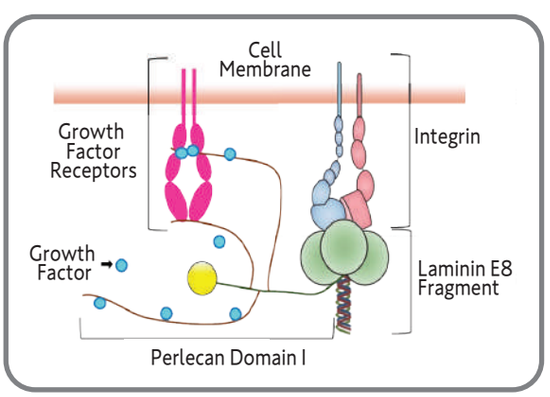
Perlecan is a multifunctional protein found in the basement membrane. It acts as a structural and signaling hub—binding important growth factors and interacting with matrix components to support cell growth, communication, and differentiation. Its unique Heparan Sulfate (HS) chains allow it to capture and stabilize molecules like bFGF, making the surrounding matrix more than just a scaffold—it becomes an active, instructive environment.



Why Use Perlecan-Conjugated Laminin?

When Perlecan’ s domain I is conjugated to Laminin E8 fragments, it creates a next-generation matrix called P-Laminin E8, designed specifically for stem cell culture and regenerative medicine.
This engineered matrix offers the benefits of both proteins:

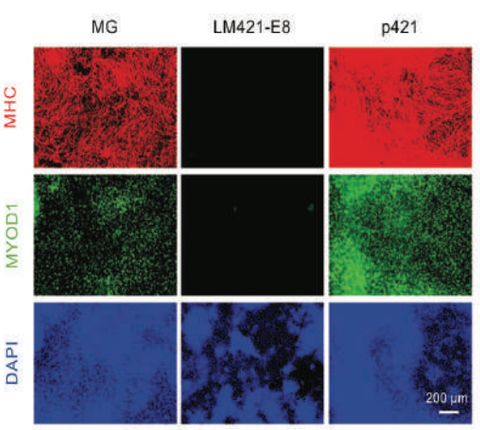
Laminin E8 promotes strong cell adhesion via integrin binding → **Perlecan domain I brings signaling power through growth factor binding**



1. **Laminin E8 Fragment**
   This truncated form of Laminin retains integrin-binding sites, ensuring strong and specific adhesion to stem cells.
2. **Perlecan Domain I**
   Conjugated to the Laminin E8, this domain includes Heparan Sulfate (HS) chains capable of capturing growth factors at the cell surface.
3. **Dual-Function Surface**
   The result is a matrix that supports both mechanical anchoring (via integrins) and biochemical signaling (via HS chains)—a synergistic approach to stem cell culture.

- Anchors cells securely through strong integrin binding.
- Enhances growth factor signaling via Heparan Sulfate chains.
- Promotes efficient skeletal muscle differentiation from hiPSCs.
- Improves culture stability and long-term cell survival.
- Retains full functionality after refrigerated storage.

Developed in collaboration with leading researchers, P-Laminin E8 is a peer-reviewed, next-generation substrate—advancing stem cell culture and regenerative medicine through the power of Perlecan.



Zhao M, et al. (2024). Adv Sci (Weinh). 26:e2308306. PMID: 38685581

MATRIXOME

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FREE SAMPLE AVAILABLE

perLAM-521

Perlecan-Conjugated Laminin-421 E8 High Purity Product

USE Inducing differentiation & promoting growth in the mesodermal cells

- Provides high integrin-binding affinity for stable and efficient cell attachment.
- Easy-to-use with both pre-mix & coating methods—ideal for streamlined workflows.
- Incorporates Heparan Sulfate (HS) chains to attract and present growth factors like bFGF.
- Facilitates mesodermal lineage differentiation and promotes robust cell proliferation.
- Capable of enhancing differentiation into mesodermal derivatives such as cardiomyocytes, endothelial cells, and skeletal muscle cells.
- A powerful alternative to Matrigel for defined, xeno-free 2D culture systems.

Catalog #	Product Name	Product Sizes	Product Grade
101 521	perLAM-521	350μg:175μg×2pcs.	RUO
101 522		1,050μg:175μg×6pcs.	RUO

*Scan for product page

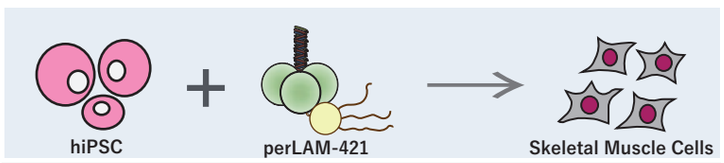
FREE SAMPLE AVAILABLE

perLAM-421

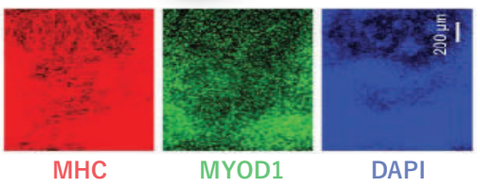
Perlecan-Conjugated Laminin-421 E8 High Purity Product

USE Inducing differentiation & promoting growth in the skeletal muscle cells

- Offers greater integrin-binding affinity for stable cell adhesion.
- Can be used with both pre-mix & coating methods.
- Contains HS chains to attract and localize growth factors.
- Effectively promotes differentiation into skeletal muscle cells.
- Enhances both cell growth and targeted lineage induction.



Catalog #	Product Name	Product Sizes	Product Grade
101 421	perLAM-421	350μg:175μg×2pcs.	RUO
101 422		1,050μg:175μg×6pcs.	RUO



Reference: Zhao M, et al. (2024). Adv Sci (Weinh). 26:e2308306. PMID: 38685581

Muscle cell differentiation:

- hiPSC-derived muscle cells (Day 38)
- P-421E8 showed higher expression of muscle markers (MHC, MYOD1, DAPI) than Matrigel.

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