Overview

Laminin is a major component of basement membranes, and has numerous biological activities including promotion of cell adhesion, migration, chemotaxis, growth, and differentiation, including neurite outgrowth.

Laminins consist of one α, one β, and one γ chain, and each chain in the laminin molecule consists of rod-like, globular, and coiled coiled regions.

The largest chain is α chain, which contains the long arm on the C-terminal end and a short arm on the N-terminal end. The C-terminal end of the long arm consists of the LG1–5 domains, which are involved in interactions with cellular receptors such as integrins and dystroglycans. The N-terminal end of the short arm is also capable of binding to integrin receptors.

Characteristics

MAPTrix™-L is produced in Kollodis’ proprietary E.coli expression system and purified using an ISO compliant manufacturing process.

Molecular Weight: ~24,000 dalton

Formula: The product is supplied as a 0.2 mg/mL, 0.5 mg/mL (2.5mg or 5.0mg vial) or 1.0mg/mL aqueous solution in pure water. Lyophilized powder is also available upon request.

Solubility:
- Soluble in a variety of buffers, including water, under a wide range of pH conditions (pH=2~9.0)
- Note: Buffers of media containing Ca\(^{2+}\) or Mg\(^{2+}\) added to MAPTrix™ may result in the formation of insoluble aggregates. This will not occur if the buffering capacity of the diluent brings the pH to 9.0 or lower.

Product Description

The major laminin’s integrin receptors are at least eight integrins (α1β1, α2β1, α3β1, α6β1, α6β4, α7β1, α9β1, αvβ3) can bind to laminins.

MAPTrix™-L provides α3β1, α6β1, αvβ3, syndecan and dystroglycan binding peptide motifs, derived primarily from N-terminal and globular domain of laminin α1, α3 and α5.

MAPTrix™-L has been demonstrated to have biological activities similar to those of the naturally occurring whole laminin molecule in primary rat hippocampus culture.

Quality Control

- Purity 93% by SDS PAGE
- pH 6.0 – 7.5
- Endotoxin Less than 20 EU/mL per LAL assay.
- Sterility Tested and found negative for the presence of bacteria, fungi and mycoplasma
- Functionality The biological activity of laminin peptide is determined in a cell culture assay under serum free conditions

Coating Procedure:
- Transfer desired volume of MAPTrix™-L solution from the vial to a dilution vessel as required.
- Dilute to desired concentration using sodium bicarbonate buffer solution (NaHCO\(_3\): 500mM at final concentration) for uniform & even coated surface. A recommended working concentration is 0.1mg/mL. (Note: Use the recommendation as guidelines to determine the optimal coating conditions for your culture system.)
- Add appropriate amount of diluted MAPTrix™-L solution to the culture surface
- Incubate at room temperature or 37°C, covered, for 1-3 hours. Best uniform coated surface with 1-2 hr incubation.
- Rinse the coated surfaces carefully with sterile medium or PBS. Avoid scratching the coated surface.

Rat hippocampal cells were primary cultured on MAPTrix™-L and Gibco Mouse laminin coated 24-well plates under serum free conditions for 14 days. The MAPTrix™-L showed comparable efficacy for pyramidal dendrite formation of primary nerve cells as compared with mouse-derived natural laminin.
MAPTrix™ ECM: A Combinatorial ECM Library

### Products

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<thead>
<tr>
<th>Cat. No</th>
<th>Peptide Motif</th>
<th>Receptor</th>
<th>Cat. No</th>
<th>Peptide Motif</th>
<th>Receptor</th>
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</table>

### Storage Conditions:

- Stable for a minimum of 6 months from day of shipment when stored at 2-8°C
- Remaining, unused solution of MAPTrix™ ECM can be stored at 2-8°C with appropriate sealing for 6 months. **DO NOT FREEZE** the remaining solution. However, the remaining material is recommended to be used within 1 month after the vial has been opened.

### References