

## Product Specification Sheet

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### MAPTrix™-E

(Cadherin peptide motif containing mussel adhesive protein)

MAPTrix™ - E is a recombinant mussel adhesive protein that can be used as a thin coating to regulate epithelial, endothelial, neural and cancer cell adhesion.

Cadherins are a family of adhesion molecules that mediate Ca<sup>2+</sup>-dependent cell-cell adhesion in all solid tissues of the organism which modulate a wide variety of processes including cell polarisation and migration. Cadherin-mediated cell-cell junctions are formed as a result of interactions between extracellular domains of identical cadherins, which are located on the membrane of neighboring cells<sup>1</sup>.

Cadherins have been shown to regulate epithelial, endothelial, neural and cancer cell adhesion, with different cadherins expressed on different cell types. N-cadherin is predominantly expressed by neural cells, endothelial cells and a variety of cancer cell types. E-cadherin is predominantly expressed by epithelial cells<sup>2</sup>.

Currently Kollodis provides two types of cadherin derived peptide motifs containing mussel adhesive proteins; notably, E-cadherin derived motif and N-cadherin derived motif.

#### CATALOG Number

E-cadherin motif	Cat. No	N-cadherin motif	Cat. No
LFSHAVSSNG	316511~4	HAVDI	316541~4
ADTPPV	316521~4	LRAHAVDING	316551~4
DQNDN	316531~4	LRAHAVDVNG	316561~4

#### Source

- Produced in *E.coli*

#### Quantity & Formula

- (1, 2.5, 5, 10) milligrams per vial, dissolved in pure water

#### Applications

- Cell culture in low serum or serum-free media
- Regulation of epithelial, endothelial, neural and cancer cell adhesion
- Possibly stem cell aggregation mediated cell - cell adhesion

#### Quality Control

- Purity >93% by SDS PAGE
- Animal protein-free & *E.coli*-protein free
- Tested and found negative for the presence of bacteria, fungi and mycoplasma
- Endotoxin concentrations are under 20 EU/mL per LAL assay.

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- Stability & Shelf Life**
- Stable for a minimum of 6 months from the day of shipment when stored at 2-8°C
  - The remaining material is recommended to be used within 1 month after the vial has been opened.
- Physical Properties**
- Molecular weight: ~23,000 Daltons
  - Excellent surface wettability on hydrophobic and hydrophilic substrates
- Solubility**
- Soluble in a variety of buffers, including water, under a wide range of pH conditions (pH=2~9.5)
  - Note: Buffers of media containing Ca<sup>2+</sup> or Mg<sup>2+</sup> added to MAPTrix™ ECM may result in the formation of insoluble aggregates. This will not occur if the buffering capacity of the diluent brings the pH to 9.5 or lower.
- References**
1. van Roy F, et al., The cell-cell adhesion molecule E-cadherin. Cell Mol Life Sci. 2008 Nov; 65(23): 3756-88
  2. Munro et al., 1996, In: Cell Adhesion and Invasion in Cancer Metastasis, P. Brodt, ed., pp.17-34

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## **Standard Coating Protocol**

Use these recommendations only as a guideline in determining the optimal coating conditions for your particular culture system.

### **Procedure**

**1. Preparation.** The MAPTrix™ ECM concentration should be adjusted for each cell line of interest. Routinely, dilute the solution type MAPTrix™ ECM product to a concentration of 0.1mg/mL with distilled water. Filter the distilled water through a 0.2 µm pore filter just prior to use.

**2. Coating.** Add 125 µL/cm<sup>2</sup> MAPTrix™ ECM solution to each well and shake your plate by moving it back and forth, together with an upward and downward motion ~3-4 times to evenly coat the plate surface and then incubate it for 2 hours at 37°C. The volume necessary for coating should be adjusted for the diameter of the culture plate used.

**3. Washing.** Remove the coating solution by pipetting or Pasteur pipette suction. Wash the coated plate with the same volume of distilled water and then remove the solution by pipetting or Pasteur pipette suction. Avoid scraping the bottom surface. Wash the plate one more time with serum-free media in the same manner.

### **Loading Amount**

· Suggested Volumes of MAPTrix™ ECM solution per well  
(The suggested volume is based on a concentration of 0.1mg/mL.)

Culture ware	Spec.	Culture area (cm <sup>2</sup> /well)	MAPTrix™ Volume (mL/well)
Plates	6-well	9.6	1.20
	12-well	3.5	0.44
	24-well	1.9	0.24
	96-well	0.75	0.10
Dishes	35mm	8.8	1.10
	60mm	21.5	2.69
	100mm	56.7	7.09
Flasks	25	25	3.13
	80	80	10.00
	175	175	21.88

Note: The culture area calculated is based on the NUNC brand of products.

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