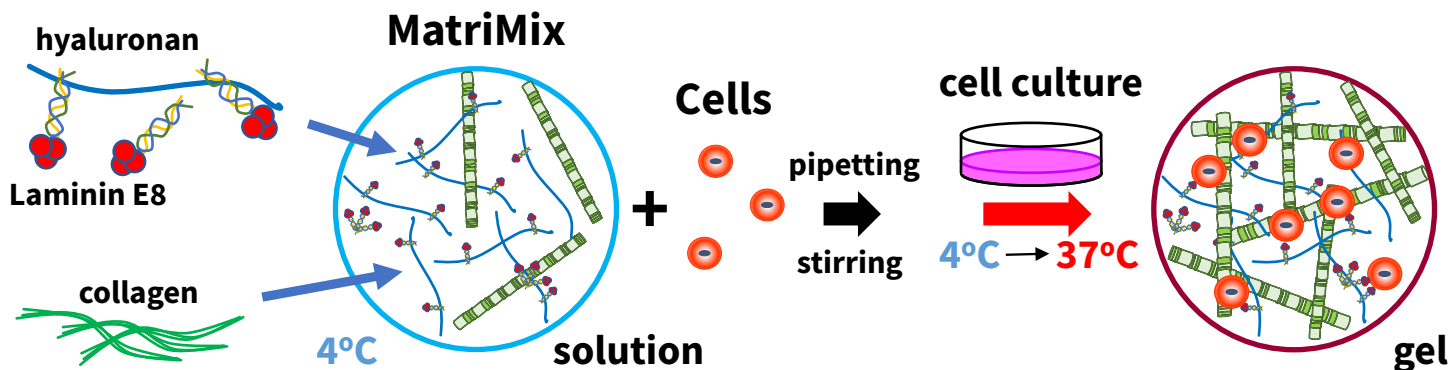


# MatriMix 3D Cell Culture Substrate



MatriMix is a new 3D culture substrate consisting of collagen, laminin E8 fragments (LME8), and hyaluronan. The type, combinations, and concentrations of each component can be customized to provide a micro-environment that is suitable for various types of cells. MatriMix is composed of 3 solutions (A: DMEM/LM E8 and hyaluronan, B: sodium bicarbonate, C: collagen), which are mixed just before incubation. The mixture is a solution when cold and becomes a gel when incubated at 37°C. MatriMix can be used not only for “in gel” and “on gel” cell culture, but also cell transplantation into mice.



## Laminin E8 fragment

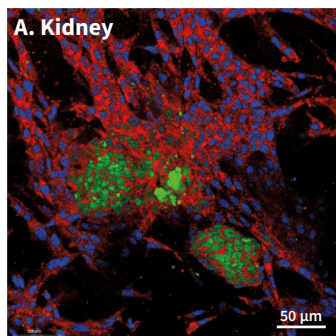
The laminin C-terminal E8 fragment is a recombinantly expressed peptide comprising about 1/5 of the full length laminin. Laminin-511 E8 fragments have a strong interaction with integrin  $\alpha\beta 1$ , which reduces cell motility.

	MatriMix	EHS Tumour extract	Synthetic polymer-based gel
Component customization (collagen, laminins, other ECM components)	++	-	-
Adjustment of gel strength	++	-	-
Induction of organoid differentiation	+	+	-
Well-defined material composition	+	-	+
Growth factor (impurity free)	+	- Growth factor reduced type (+)	+
Gel transparency	+	+	-
Stromal induction in cancer cell organoids	+	-	-

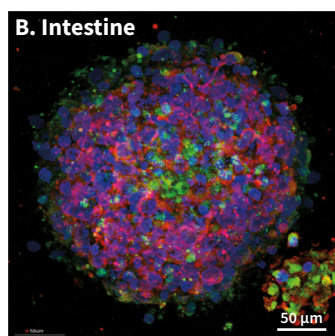
The MatriMix series was developed especially for scientists not satisfied with their current 3D substrates.

Product name	Product Code	Pack Size	Pack Contents
<b>MatriMix (511)</b>	NP899-001	1 kit	Solution A: 3.6 mL cross-linked laminin 511 E8 in DMEM [1.85 ×] Solution B: 1 mL sodium bicarbonate 2.5% Solution C: 3.0 mL collagen 5.0 ng/mL

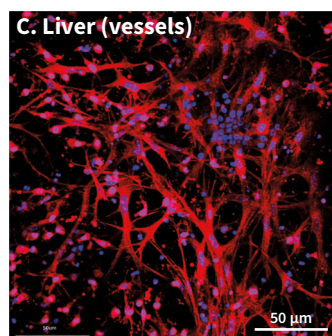
## Organoid formation (various tissues)



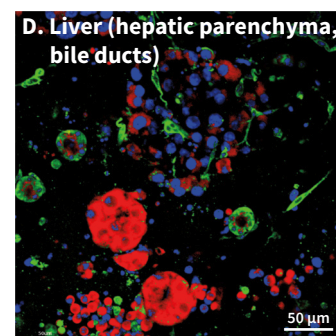
**A. Kidney**  
PECAM-1 / Podocalyxin / DAPI



**B. Intestine**  
Col IV / CDX2 / DAPI



**C. Liver (vessels)**  
PECAM-1 / DAPI



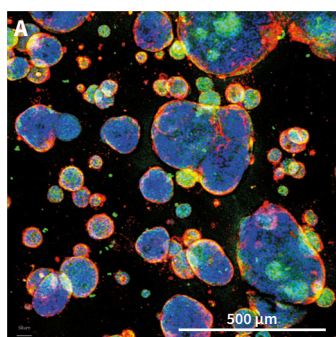
**D. Liver (hepatic parenchyma, bile ducts)**  
ALB / CK19 / DAPI

Cells derived from tissues during mouse development were cultured in 3D using MatriMix. Cell organization occurred by day 7 of culture.

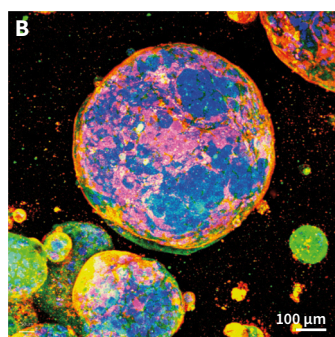
**A:** Kidney      Green – Podocalyxin: glomerular epithelial cells; Red – PECAM-1: vessels  
**B:** Intestine      Green – CDX2: mature intestinal cells; Red – Col IV: type IV collagen

**C:** Liver (vessel)      Red – PECAM-1: vessels  
**D:** Liver (hepatic parenchyma, bile ducts)      Green – Podocalyxin: bile ducts; Red – PECAM-1: hepatic parenchyma, bile ducts

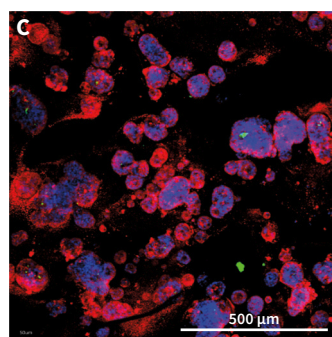
## Organoid formation (cells derived from colon cancer patient)



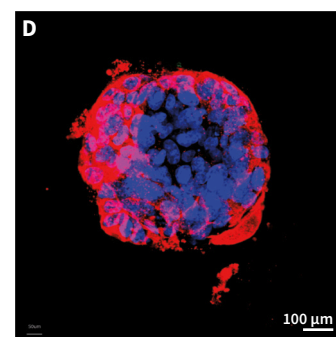
**A**  
CEA / Vimentin / DAPI



**B**  
CEA / Vimentin / DAPI



**C**  
CEA / Vimentin / DAPI



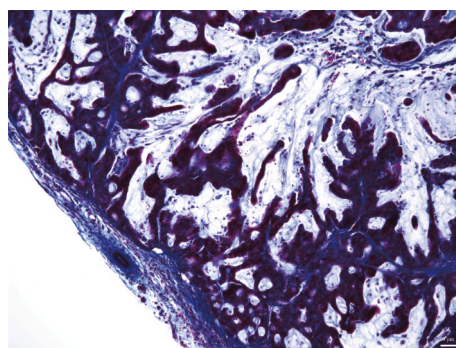
**D**  
CEA / Vimentin / DAPI

Cells derived from colon cancer patients were cultured in 3D on each substrate for 8 days. Organoids formed in MatriMix were positive for both Vimentin and CEA (Figure A,B). Organoids formed in EHS tumor extract culture were negative for Vimentin (Figure C,D).

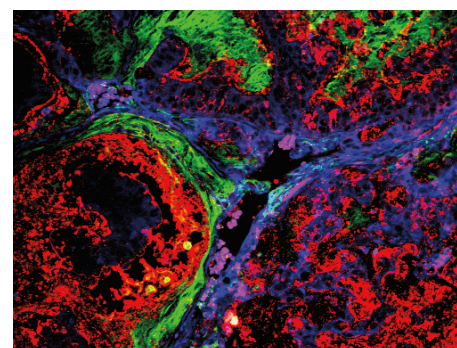
## Transplantation model in mice (cells derived from colon cancer patient)



**PDSX model mouse**



**Masson trichrome stain**



**Col I / CEA / Col IV**

The PDSX (Patient-derived spheroid xenograft) model was created by transplanting spheroids of cells derived from colon cancer patient into immunodeficient mice (Figure A, red arrow: formed tumor). Tissue analysis revealed a large number of colon cancer marker (CEA)-positive cell populations in the tumors and vascular invasion had occurred (Figure B,C).

For more information and for other applications contact [info-us@reprocell.com](mailto:info-us@reprocell.com)