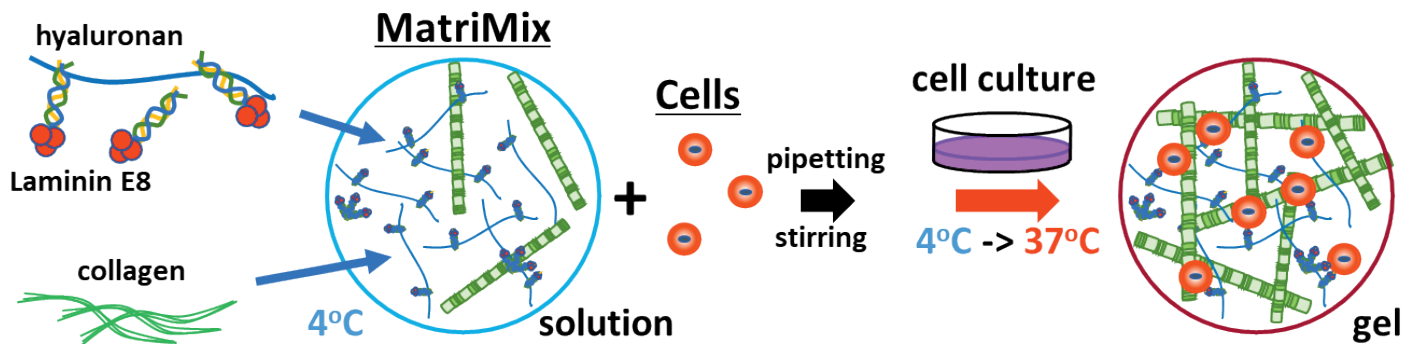




New 3D Culture Substrate MatriMix

MatriMix for 3D cell culture

MatriMix is a new 3D culture substrate consisting of collagen, laminin E8 fragments (LM E8) and hyaluronan. The type, combinations, and concentrations of each component can be customized to provide a microenvironment 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, a solution when cold, becomes a gel when incubated at 37 °C. MatriMix can be used not only for “in gel” and “on gel” cell culture, but also for cell transplantation into mice.



Laminin E8 fragment

The laminin C-terminal E8 fragment, which is about 1/5 of the full-length laminin molecule, is recombinantly expressed. Laminin-511E8 has a strong interaction with cellular integrin $\alpha 6 \beta 1$ and induces cell motility.

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

	MatriMix	EHS tumor 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	+	—	—



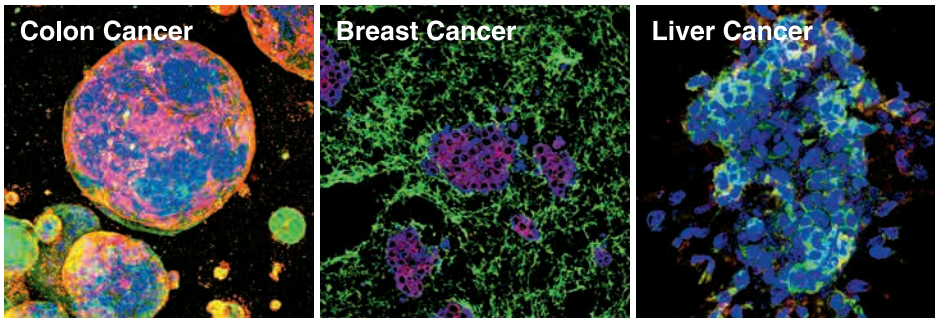
Nippi, Incorporated, Biological and Chemical Products Division

1-1-1 Senju Midori-cho, Adachi, Tokyo 1208601, Japan
 Phone: +81-3-3888-5184 E-mail: MatriMix@nippi-inc.co.jp
 URL: <https://www.nippi-inc.co.jp/> MatriMix: <https://matrimix.nippi.bio/en>



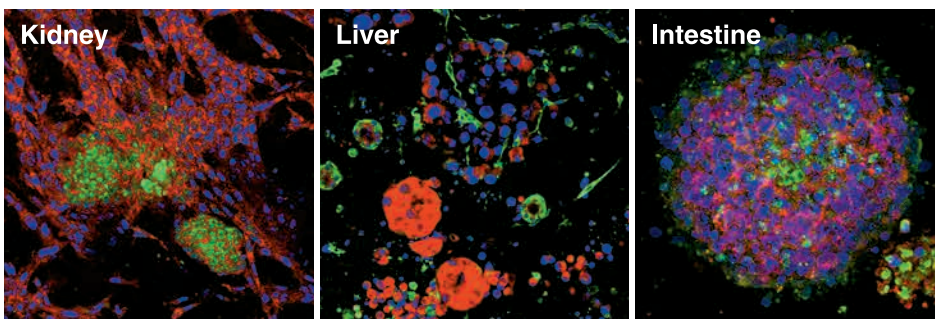
◆ Induction of organoid formation by cancer cells and early embryo derived cells

Cancer cell lines



- Like other 3D culture substrates, in MatriMix spheroids and organoids can be formed from cancer and developing cells.
- Composition customization affects organoid formation.

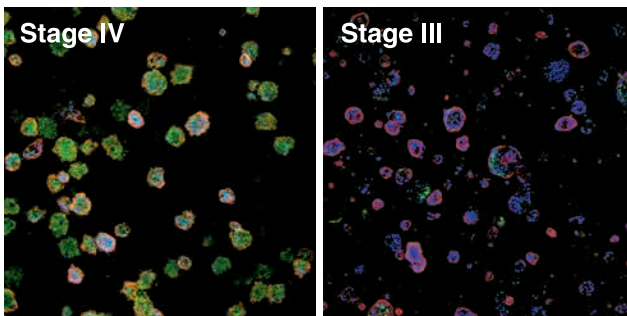
Mouse embryonic cells



- MatriMix can be applied for cell cultures that are difficult to grow and organize when using a gel made from EHS tumor extracts.

◆ Effects of MatriMix gels on colon cancer patients derived spheroid cultures

Patient-derived cell cultures



- When patients-derived cells are cultured in MatriMix gels, the difference of marker gene expression between patients at different cancer stages can be observed. This phenomenon was not be observed when the same cells were cultured using a gel made from EHS tumor extracts. It is possible that by using MatriMix, patient-derived cells can be cultured more closely to “*in vivo*”.

ZEB-1 (green), E-cad (red), DAPI (blue)

Patient-derived spheroid xenograft (PDSX) model



Type I col (green),
CEA (red),
Type IV col (blue)

- MatriMix can be used for the transplantation of cancer spheroids into nude mice as well as the EHS tumor extracts.

For more information and for other applications, please contact us at: MatriMix@nippi-inc.co.jp