

Extracellular Matrix Data Sheets

PRODUCT NAME

Extracellular Matrix Hydrogel (Extrigel), Phenol Red-free, Reduced Growth Factor

PRODUCT NUMBER

AMS.SEM-R02

PRODUCT INTRODUCTION

The basement membrane is a matrix under the basal surface of the epithelial cells of animals. Extrigel is a reconstituted matrix hydrogel formed by basement membrane components extracted from mouse tumor tissues. This matrix hydrogel is mainly composed of laminin, collagen IV, and heparan sulfate proteoglycans (Kleinman et al. 1986). Besides, it contains various growth factors, such as epidermal growth factor (EGF), platelet-derived growth factor (PDGF), nerve growth factor (NGF), basic fibroblast growth factor (FGF-2), transforming growth factor- β (TGF- β), and insulin-like growth factor (IGF) (Vu-kicevic et al. 1992).

PRODUCT CHARACTERISTICS

Extrigel is liquid at 4°C but gelled when heated to 37°C. This transformation phenomenon is reversible. It can be liquefied again when it is stored at 4°C overnight. (Tip: It is recommended to store the Extrigel in an ice box in a refrigerator at 4°C to realize the full liquefaction of the reconstitute matrix hydrogel.)

STORAGE CONDITION

Dispense Extrigel into appropriate aliquots. Stable for 2 years when stored at -80°C. -20°C freezer storage is ideal for short-term storage.

PRODUCT APPLICATION

This product can be applied to the growth, differentiation, metabolism, and toxicology of organoids.

PRECAUTIONS

Extrigel would start solidifying after the temperature is higher than 10°C, so the operation should be performed on ice. The matrix hydrogel can be dissolved in a basic culture medium pre-chilled at 4°C, and the organoid can be released from the Extrigel.

SPECIFICATIONS

Concentration	8-12 mg/mL
Product Type	Basement Membrane Matrix
Sterility	Sterile
Endotoxin Level	<2 EU/mL
Quality Grade	Cell Culture Grade
Shipping Condition	Dry Ice
Product Line	AMSBIO
Form	Frozen
Shelf Life	24 months
Quantity	1 mL
Format	Tube(s)

Cell Type	Primary epithelial cells, endothelial cells, human embryonic stem cells (hESC), human induced pluripotent stem cells (iPSC)
Serum Level	Serum Free
LDEV PCR Test	LDEV Free
Mycoplasma PCR Test	Mycoplasma Free

OPERATION METHOD

Organoid culture (1 hour)

1. Thaw the Extragel (OM-3) in a refrigerator at 4°C overnight.
2. Preheat the 24-well plate in the cell culture incubator.
3. Prepare aliquots of Extragel using pre-chilled tips.
4. Prepare the single-cell pellet with 1×10^5 cells derived from patients or animal tissue, centrifuged at 300 g for 5 minutes.
5. Mix the cell pellet with 50 μ L Extragel thoroughly.
6. Add the mixture into the well of a plate (50 μ L per well).
7. Keep the plate in the incubator for 10 minutes, flip it, and keep it after another 5 minutes.
8. Add 500 μ L culture medium to the well with matrix and cells.
9. Change the medium every 3 days.

PRACTICAL APPLICATION CASES

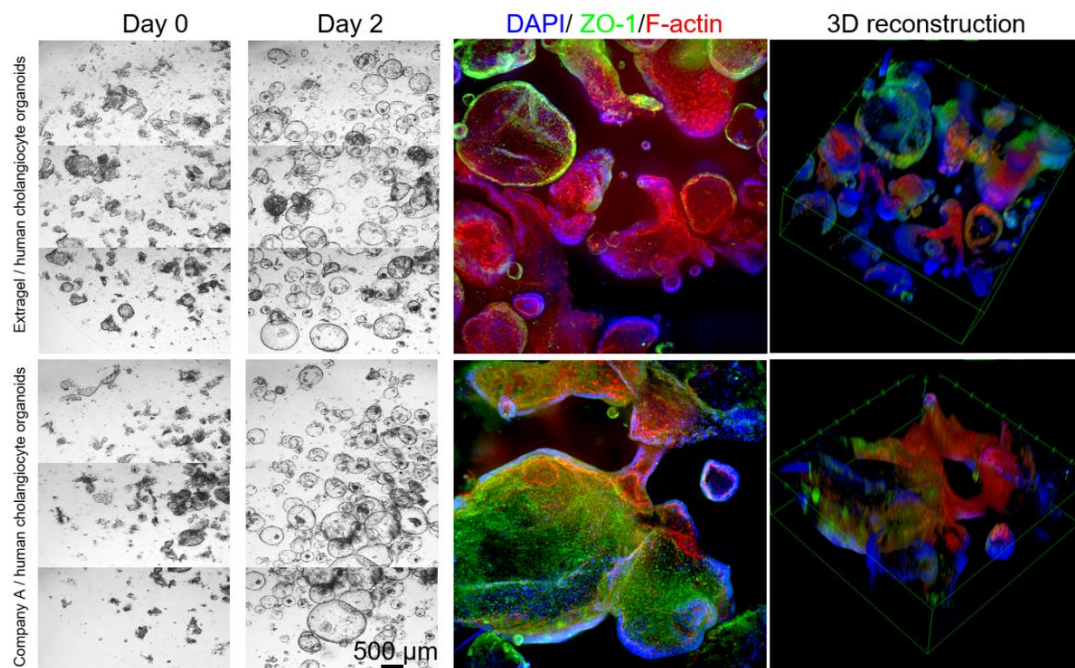


Figure 1. Establishment of human bile duct organoids in the matrix hydrogel of Company A and Extragel, respectively. Human bile duct organoids are imaged after being stained with DAPI (nucleus, blue), anti-ZO-1 antibody (tight-junction protein), and Alexa Fluor 647 Phalloidin (cytoskeleton protein F-actin).

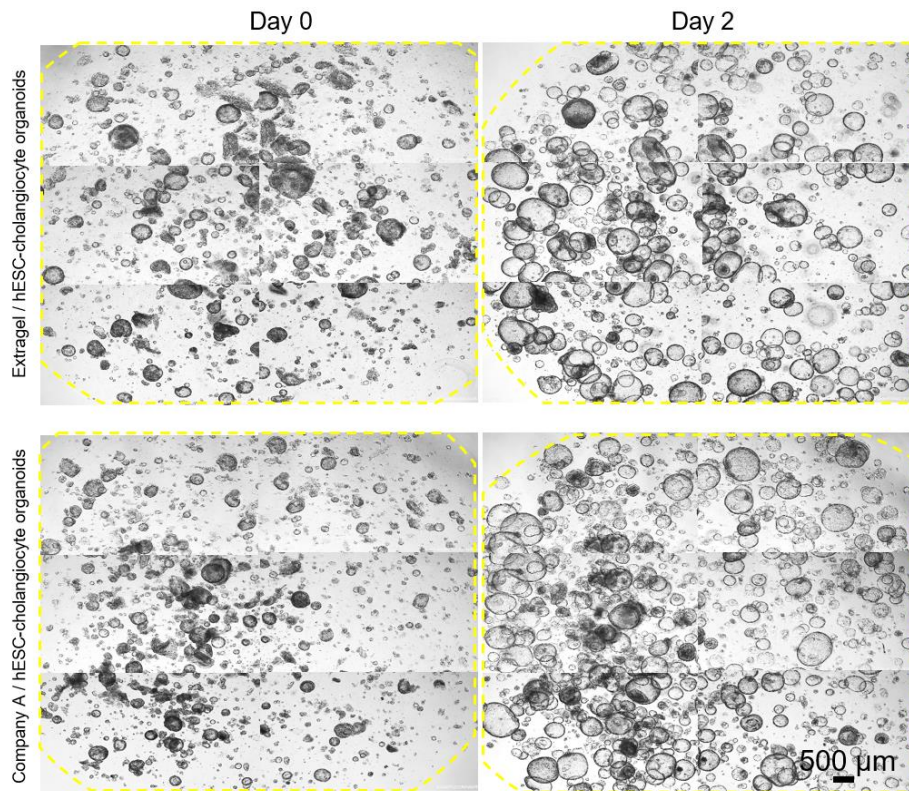


Figure 2. Growth of human bile duct organoids derived from human embryonic stem cells in the matrix hydrogel of Company A and Extragel, respectively.

REFERENCE

1. Kleinman HK, et al, Basement membrane complexes with biological activity. *Biochemistry* 25: 312 (1986).
2. Vukicevic, Slobodan, et al. Identification of multiple active growth factors in basement membrane Matrigel suggests caution in the interpretation of cellular activity related to extracellular matrix components. *Experimental cell research* 202: 1 (1992).
3. Guillen, K P, et al. A human breast cancer-derived xenograft and organoid platform for drug discovery and precision oncology. *Nature Cancer* 3: 232 (2022).

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