

**Solutions**

**Atelocollagen, Native collagen Acidic Solutions**

Highly purified collagen solution (pH 3.0) for cell culture. Suitable for culture dish coating and preparing collagen gel medium.

Atelocollagen (IPC) : Pepsin-solubilized type I collagen solution  
 Native collagen (IAC): Acid-solubilized type I collagen solution



**Applications**

- > Collagen coating of culture dishes
- > Cell culture in a collagen gel
- > Cell culture on a collagen gel

**Features**

- > Atelocollagen and Native collagen gelate when neutralized and placed under physiological condition.

Cat. No.	Description	Quantity	Storage
KKN-IPC-30	Atelocollagen, Bovine dermis, 3mg/mL (sterile)	50 mL/btl	2-10°C
KKN-IPC-50	Atelocollagen, Bovine dermis, 5mg/mL (sterile)	50 mL/btl	2-10°C
KKN-IAC-30	Native collagen, Bovine dermis, 3mg/mL (sterile)	50 mL/btl	2-10°C
KKN-IAC-50	Native collagen, Bovine dermis, 5mg/mL (sterile)	50 mL/btl	2-10°C

**Atelocollagen Neutral Solutions**

Atelocollagen neutral solution (pH 7.4) containing highly purified atelocollagen derived from bovine dermis.



**Applications**

- > Cell culture in a collagen gel
- > Cell culture on a collagen gel

**Features**

- > Solutions gelate at 37°C.
- > Ready-to-use: atelocollagen is mixed with medium.

Cat. No.	Description	Quantity	Storage
KKN-MEN-02	Atelocollagen, Eagle's MEM (sterile)	20 mL/btl	-20°C
KKN-DME-02	Atelocollagen, DMEM Low Glucose (sterile)	20 mL/btl	-20°C
KKN-DME-02H	Atelocollagen, DMEM High Glucose (sterile)	20 mL/btl	-20°C
KKN-RPM-02	Atelocollagen RPMI 1640 (sterile)	20 mL/btl	-20°C

**Others**

Cat. No.	Description	Quantity	Storage
KKN-CL-22	Type II collagen (sterile) from bovine cartilage	10 mL/btl	2-10°C
KKN-CLS-01	Atelocollagen sponge	1 pc/bag	2-10°C
KKN-CLF-01	Atelocollagen membrane	1 sheet/bag	-20°C
KKN-CLP-01	Atelocollagen powder	500 mg/btl	-20°C

For research use only. Not for diagnostic use.

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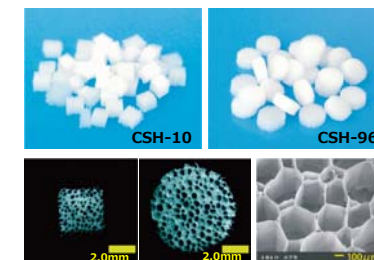
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AteloCell® series of sponge, membrane and solution products made from highly purified collagen are useful in all phases of cell culture from daily cell maintenance to fundamental research to regenerative medicine.

**Sponge**

**Atelocollagen, Honeycomb sponge**

Lyophilized atelocollagen sponge shows a honeycomb structure with high pore density and unidirectional characteristics. This honeycomb structure enables easy supply of nutrients to cells and excretion of waste products from cells.



**Applications**

- > 3D cell culture
- > Carrier for regenerative medicine research

**Features**

- > Directed luminal structure.
- > Cells can be easily harvested by collagenase treatment.

**" Suppression of tumorigenesis from transplanted mouse ES cells by cultivation with Honeycomb sponge (CSH-10) . "**

(M. Yamaki. Matsumoto dental university)

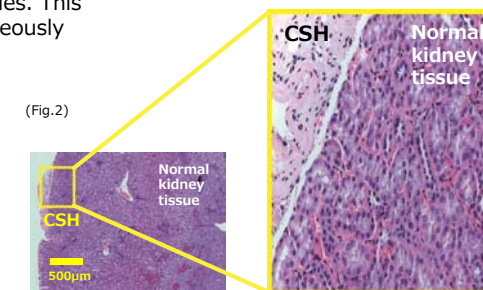
Mouse ES cells cultured on CSH-10 were transplanted by subcutaneous injection into 6-week-old mice. Although all embryoid bodies without CSH-10 (ES/-CSH) formed tumor without exception, every embryoid bodies with CSH-10 (ES/+CSH) did not form tumor (Fig.1).

Histological analysis of transplanted (ES/+CSH) and normal kidney showed no differences between the two tissues. This result indicates the normal differentiation is spontaneously achieved *in vivo* (Fig.2).

(Fig.1)



(Fig.2)



Cat. No.	Description	Quantity	Storage
KKN-CSH-10	Atelocollagen Honeycomb sponge (sterile)	100 mg/btl	Room Temperature
KKN-CSH-96	Atelocollagen Honeycomb Disc 96 (sterile)	25 pcs/btl	Room Temperature

## Atelocollagen sponge, MIGHTY

Collagen sponge derived from bovine dermal type I collagen shows resistance to compressive loading (maximum is 30 kPa, single load). Culturing with dynamic stimulus enables analysis of cell function in a condition close to *in vivo*.



### Applications

- > Cell culture under dynamic stimuli
- > 3D cell culture
- > Carrier for cell transplant

### Features

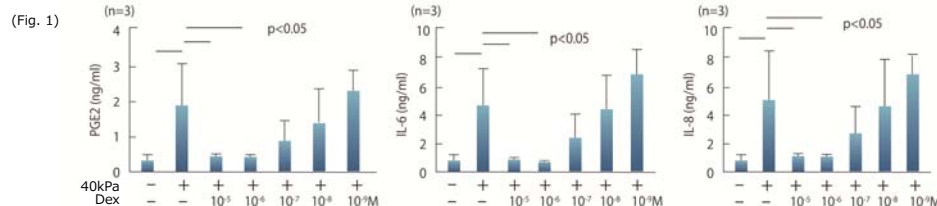
- > Retains structural rigidity during repeated compression loading of 10-20 kPa.
- > Sized for 96-well plates.

### “Mechanical stimulus culture assay using MIGHTY.”

(K. Shimomura, K. Nakata et al. Osaka University, Faculty of Medicine)

Forty kPa of repeated compressive load for 1 hour induced the expression of PEG2, IL6 and IL8, which are correlated to arthritis, after three days cultivation on MIGHTY.

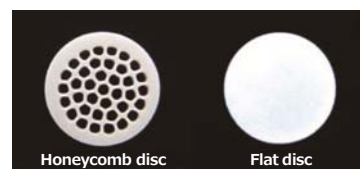
Dexamethasone (Dex), anti-inflammatory agent, reduced the expression of PEG2, IL6 and IL8 in a concentration-dependent manner. These results indicate MIGHTY can be used for *in vitro* arthritis models.



Cat. No.	Description	Quantity	Storage
KKN-CSM-25	Atelocollagen sponge, MIGHTY 25 pcs (sterile)	25 mg/btl	Room Temperature
KKN-CSM-50	Atelocollagen sponge, MIGHTY 50 pcs (sterile)	50 pcs/btl	Room Temperature

## Atelocollagen coated β-TCP scaffold

β-tricalcium phosphate (β-TCP) is coated with atelocollagen that shows high biocompatibility. β-TCP is a widely-used bone prosthetic material due to its exquisite osteoconductive property.



### Applications

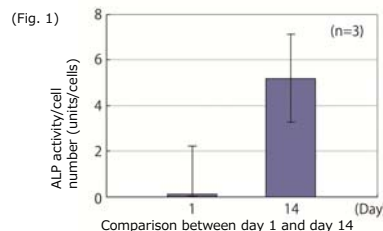
- > Bone remodeling studies (cell culture of osteoblasts or osteoclasts etc.)
- > Functional analyses of osteogenesis related factors

### Features

- > Honeycomb discs and Flat discs are contained (5 pieces each).

### “Elevation of ALP activity (bone differentiation marker) by cultivation with atelocollagen coated β-TCP scaffold.”

MC3T3-E1 cells (1x10<sup>4</sup> cells) were cultivated on atelocollagen coated β-TCP scaffold in MEMα plus 10%FBS. Elevated ALP activity (bone differentiation marker) was observed on day 14.



Cat. No.	Description	Quantity	Storage
KKN-ACB-05S	Atelocollagen coated β-TCP scaffold (sterile) Disc size : Φ3x1 mm	10 pcs/btl	Room Temperature

## Collagen sponge for 35mm culture dish

The lyophilized collagen sponge from insoluble type I collagen derived from bovine Achilles tendon.



### Applications

- > Cell culture on a sponge

### Features

- > Culturing of cells and tissue sections on a sponge.

Cat. No.	Description	Quantity	Storage
KKN-CS-35	Collagen sponge for 35mm culture dish (sterile)	5 pcs/box	Room Temperature

## Membrane

### Atelocollagen, Permeable membrane for 50mm culture dish, 6-well/24-well culture plate

Amino acids and other small molecules can move freely through the permeable collagen membrane. Suitable for culture of primary epithelial cells and cell interaction studies.



### Applications

- > Cell culture

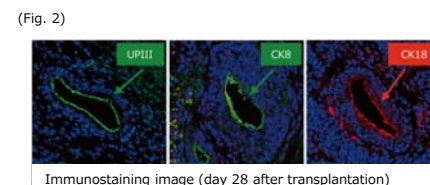
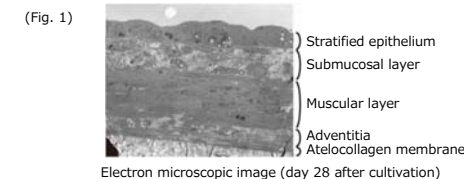
### Features

- > Microscopic observation of the cells is possible during the culture due to high membrane transparency.
- > Cell culture on collagen membrane creates a natural environment that resembles *in vivo* systems.

### “Induction into layered tissue from mouse embryoid body on permeable collagen membrane and transplantation.”

(Y. Kinebuchi et al. Shinonoi general hospital, Shinshu university, faculty of medicine)

Mouse embryoid body was cultivated on permeable collagen membrane in a mixed medium of keratinocyte serum-free medium and conditioned medium from 3T3 cells. These cells formed four-layered structures *in vitro* after 28 days culture (Fig. 1). Upon transplanting these four-layered structure, the formation of luminal walls and the expression of some epithelial cell marker, UPIII (urothelium), CK8, and CK18 (bladder) were observed *in vivo* (Fig. 2).



Cat. No.	Description	Quantity	Storage
KKN-MEN-01	Atelocollagen permeable membrane for 50 mm culture dish (sterile)	5 pcs/box	-20°C
KKN-CM-6	Atelocollagen membrane for 6-well culture plate (sterile)	24 pcs/box	-20°C
KKN-CM-24	Atelocollagen membrane for 24-well culture plate (sterile)	24 pcs/box	-20°C

## Microspheres

### Collagen microspheres

Bead-like atelocollagen carrier for cell culture. Useful for maintenance of cell function during culture of fibroblasts, epithelial cell and osteoblasts.



### Applications

- > High density cell culturing

### Features

- > Collagen microspheres set the intravital-like environment since these are derived only from fibril-forming type I collagen.

Cat. No.	Description	Quantity	Storage
KKN-MIC-00	Collagen microspheres (sterile) Size: 100-400 μm, About 3,000,000 particles, Total surface area: about 3,800 cm <sup>2</sup> /15 ml	15 mL/btl	2-10°C (Do not freeze)