



Evolving Biomaterial — Collagen and Gelatin

Living with the Cells.

Future Healthcare
with
Collagen and Gelatin

Life Science Products

Collagen and Gelatin Product Guide

Collagen for cell culture

Cellmatrix®

Collagen for three-dimensional culture / for coating

- Collagen solution at pH 3 with a concentration of 3 mg/mL
- Storage condition: Cold storage (4 °C to 8 °C)



Cellmatrix® Type I – A

- Ideal for collagen gel culture.
- The gel has high transparency and ensures ease of microscopic observation.
- Acid extracted collagen derived from porcine tendons.
- Expiration date: One year from the date of manufacture

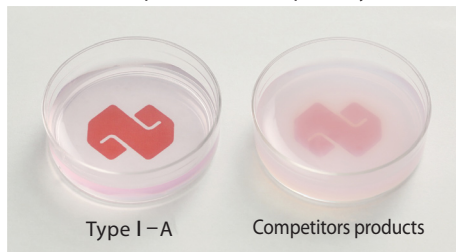
Cellmatrix® Type I – P

- Recommended for collagen gel culture and collagen-coated culture.
- Pepsin-solubilized collagen derived from porcine tendons.
- Expiration date: Two years from the date of manufacture

Cellmatrix® Type I – C

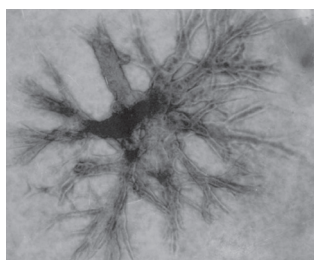
- Recommended for collagen-coated culture.
- Pepsin-solubilized collagen derived from porcine skin.
- Expiration date: Two years from the date of manufacture

Comparison of Transparency

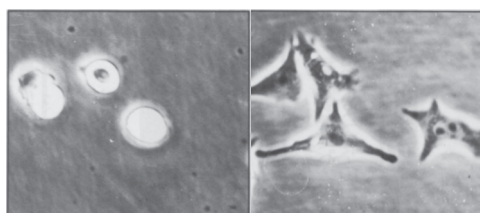


Type I-A is a collagen product with an optimized gelation rate and transparency for 3-dimensional culture. It can quickly form a gel before the cells sink to the bottom of the culture dish. In addition, the gel is highly transparent, allowing easy observation of the cells embedded in the collagen

Growth morphology of mouse breast cancer cells cultured in an embedded collagen gel



Adhesion of cultured cells



Uncoated

Collagen coated

Collagen-gel culturing kit/Concentrated culture medium/ Reconstitution buffer

■ Storage condition: Cold storage (4°C to 8°C) ■ Expiration date: In four months



Collagen-gel culturing kit

Contents

Cellmatrix® Type I -A	20 mL	One bottle
Concentrated culture medium (Ham's F-12)	5 mL	One bottle
Concentrated culture medium (MEM-Hank's)	5 mL	One bottle
Reconstitution buffer	4 mL	Five bottles



Concentrated culture medium

Concentrated culture medium for collagen gel culture

Some items are made to order

10x concentrated product :	5x concentrated product :
• Ham's F-12 concentrated culture medium	• DME concentrated culture medium
• MEM-Hank's concentrated culture medium	• RPMI-1640 concentrated culture medium
• DF concentrated culture medium(DME : F-12=1:1)	
• 199 concentrated culture medium	



Reconstitution buffer

Buffer solution for reconstitution, for collagen gel culture

Composition

Sodium hydroxide	50 mM
Sodium hydrogen carbonate	260 mM
HEPES	200 mM

Cellmatrix products list

Product name	Content
Cellmatrix® Type I -A	20 mL
	100 mL
Cellmatrix® Type I -P	20 mL
	100 mL
Cellmatrix® Type I -C	20 mL
	100 mL
Collagen-gel culturing kit	1 kit
Ham's F-12 concentrated culture medium	100 mL
MEM-Hank's concentrated culture medium	100 mL
DF concentrated culture medium	100 mL
199 concentrated culture medium	100 mL
DME concentrated culture medium	100 mL
RPMI-1640 concentrated culture medium	100 mL
Reconstitution buffer	4 mL × 15 bottles



For Research Use Only

The above products are sold for research purposes only. Regardless of purposes, such as the production of drugs, product quality control, various diagnostic tests, medical treatment, or other researches, do not use the products for the human body.

Method of Collagen Gel Culture

Prepare the following three types of solutions, i.e, A, B, and C.

- A: Cellmatrix® Type I – A or I – P
- B: 10x concentrated Culture Solution¹⁾
- C: Buffer Solution for Reconstitution

Mix A and B well at a ratio of 8 to 1 while cooling A and B so that the mixture does not foam. Then add C at a ratio of 1 to previous mixture and mix them together.¹⁾

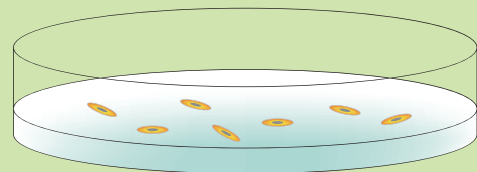
¹⁾ In the case of using culture solution at a concentration of approximately 5x, the following mixture ratio will apply: A:B:C=7:2:1

Culture on collagen gel

The above collagen mixture will turn into a gel when the solution is dispensed to a culture dish and heated at 37°C for 30 minutes. Keep the mixture cold before incubation or during mixing.



After gelation spread the cell dispersion onto the gel. Once the cells adhere to the gel, it will be possible to culture the cells like normal monolayer culture.



This is a method to culture the cells on the collagen gel.

Collagen gel-embedded culture

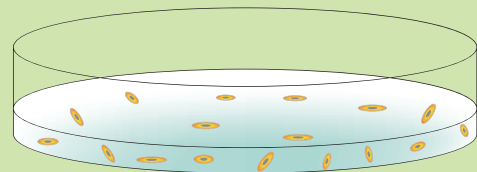
Add the resultant mixture (A+B+C) mentioned above to cell pellet obtained after centrifugation and mix well.



Dispense this collagen mixture solution to a culture dish and leave the solution at 37°C for 30 minutes so that the solution will turn into a gel.



After the gel is formed, overlay with culture solution and perform culture in an ordinary manner.



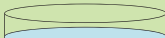
A method of three-dimensional cell culture in collagen gel

Method of Collagen Coating

Cellmatrix®
Type I-C
or I-P

pH3 hydrochloric acid solution that is 10 times the amount of collagen*

* Adjust the dilution ratio depending on the purpose.



Perform culture like monolayer culture.

Dispense and thinly spread the diluted collagen solution to a dish and aspirate the excessive amount of collagen.

Dry the collagen solution in a clean bench. Leave the collagen solution for 30 to 60 minutes.

Wash the coated dish twice with the culture solution.

MedGel® II

MedGel® is a hydrogel for sustained release of drugs

- Simple use just by adding drug.
- Drug stabilization in vivo, site-specific drug release.
- No chemical crosslinking agent used.



MedGel® Sheet II (PI5)

- Storage condition : Room temperature
- Expiration date : Two years from the date of manufacture
- pI (isoelectric point) : Approximately 5
Negative charge in neutral solution

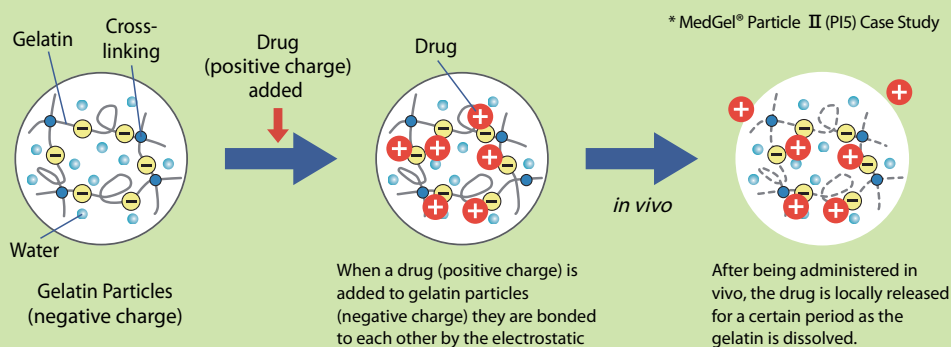
MedGel® Sheet II (PI9)

- Storage condition : Room temperature
- Expiration date : Two years from the date of manufacture
- pI (isoelectric point) : Approximately 9
Positive charge in neutral solution

MedGel® Particle II (PI5)

- Storage condition : Room temperature
- Expiration date : Two years from the date of manufacture
- pI (isoelectric point) : Approximately 5
Negative charge in neutral solution

Mechanism of drug delivery through MedGel II



MedGel® II products list

Product name	Content
MedGel® Sheet II (PI5)	150 mg
MedGel® Sheet II (PI9)	150 mg
MedGel® Particle II (PI5)	15 mg × 2 bottles
	100 mg × 1 bottle

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beMatrix®

Low endotoxin gelatin

- Endotoxin level: NMT 10EU/g ■ Virus inactivated
- IPEC-PQG GMP compliant ■ Performed USP & JP methods testing
- DMF / MAF registered ■ Storage condition: Room temperature
- Expiration date: Three years from the date of manufacture



beMatrix® gelatin LS - H

- Alkaline-treated gelatin derived from porcine skin
- High gel strength : 300 g

beMatrix® gelatin LS - 250

- Alkaline-treated gelatin derived from porcine skin
- High gel strength : 250 g
- γ -ray irradiated

beMatrix® gelatin LS - W

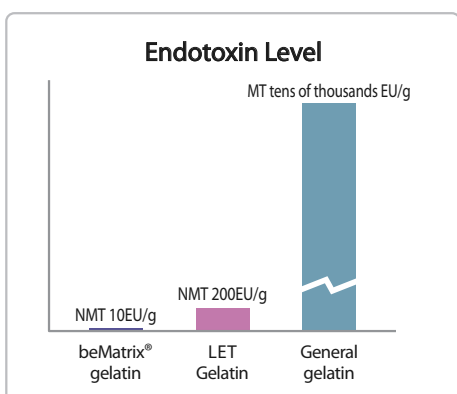
- Made to order product
- Alkaline-treated gelatin derived from porcine skin
- Low gel strength : 100 g
- Safety Test

Test Item	Cytotoxicity	Sensitization	Intradermal Reaction	Pyrogen	Antigenicity
Result	Negative	Negative	Negative	Negative	Negative

beMatrix® gelatin HG

- Hydrolyzate of alkaline-treated gelatin derived from porcine skin
- Non gelling grade
- γ -ray irradiated
- Safety Test

Test Item	Cytotoxicity	Sensitization	Intradermal Reaction	Pyrogen	Antigenicity	Acute Systemic Toxicity	Subacute Toxicity
Result	Negative	Negative	Negative	Negative	Negative	Negative	Negative



beMatrix products list

Product name	Content
beMatrix® gelatin LS-H	10 g
beMatrix® gelatin LS-250	10 g
beMatrix® gelatin LS-W	Please contact us
beMatrix® gelatin HG	10 g



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Low endotoxin collagen



beMatrix® collagen AT

Acid extracted collagen solution derived from porcine tendon

- Low endotoxin level (NMT 0.5EU/mL)
- Storage condition: Cold storage (4°C to 8°C)
- Expiration date: Two years from the date of manufacture
- Concentration: 3 mg/mL, pH 3

beMatrix® collagen TE

Pepsin-solubilized collagen solution derived from porcine skin

- Low endotoxin level (NMT 0.5EU/mL)
- Storage condition: Cold storage (4°C to 8°C)
- Expiration date: Two years from the date of manufacture
- Concentration: 5 mg/mL, pH 3



beMatrix® collagen FD

Lyophilized product of pepsin-solubilized collagen derived from porcine skin

- Low endotoxin level (NMT 100EU/g)
- Storage condition: Room temperature
- Expiration date: Two years from the date of manufacture

- Possible to adjust high concentrated solution

Product appearance

- Spongiform
- Size: approx. 140 x 100 x 10mm

Application

- Scaffold
- Cell culture / transplantation
- Electrospinning etc.

beMatrix collagen products list

Product name	Content
beMatrix® collagen AT	100 mL
beMatrix® collagen TE	100 mL
beMatrix® collagen FD	1 g

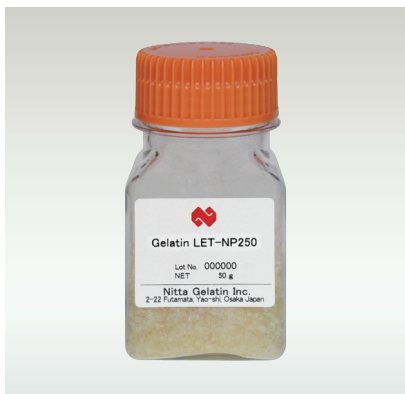


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Low endotoxin gelatin

LET Gelatin



Gelatin LET – NP250

- Gelatin derived from acid-treated porcine skin.
- Performed USP & JP methods testing.
- Endotoxin level: NMT 200 EU/g
- Storage condition: Room temperature
- Expiration date: Three years from the date of manufacture

Products list

Product name	Content
Gelatin LET-NP250	50 g



Warning

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Other products line-up

Collagen sponge

- Storage condition: Room temperature
- Expiration date: Two years from the date of manufacture
 - Pepsin-solubilized collagen derived from porcine skin.
 - γ -ray irradiated.
 - Made to order product.



for 35 mm dish

for 12 well plate

for 24 well plate

Collagen BM

- Storage condition : Stored frozen
- Expiration date: Two years from the date of manufacture
 - Pepsin-solubilized collagen derived from porcine skin.
 - Concentration: 5 mg/mL, pH 3



Products list

Product name		Content
Collagen sponge for 90 mm dish	(approx. 80 dia. x 5 mm)	1 piece /case
Collagen sponge for 35 mm dish	(approx. 32 dia. x 5 mm)	6 pieces/case
Collagen sponge for 12 well plate	(approx. 20 dia. x 3 mm)	12 pieces/case
Collagen sponge for 24 well plate	(approx. 15 dia. x 3 mm)	24 pieces/case
Collagen BM		1 kg



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