Product Parameters

Product Name:	**GelNest™ Matrix**
Product Application:	GelNest™ Matrix is prepared from basement membrane components extracted from mouse tumor tissues. The main components include laminin, type IV collagen, heparan sulfate proteoglycan, etc. These components can provide the support and signals required for cell adhesion, differentiation, and proliferation. They can also simulate the characteristics of the basement membrane in a physiological environment and improve the success rate and effect of cell culture. In addition to basement membrane components, GelNest™ Matrix is also rich in a variety of growth factors. These growth factors can promote cell differentiation, proliferation, and migration, further mimicking cell signaling pathways and interactions in physiological environments. GelNest™ Matrix has a wide range of application prospects, especially in tissue engineering, cell culture and research. It can be used for research on organoid culture, stem cell differentiation, angiogenesis, migration or invasion, and *in vivo* tumorigenesis.
Product Source:	Mouse tumor tissue basement membrane components
Appearance	GelNest™ matrix is liquid in the range of 4-10℃, will start to polymerize and forms into gel at 10-37℃. High concentration GelNest™ matrix appear to be viscous and not clear. GelNest™ with added phenol red that is frozen or just thawed may show different colors, ranging from straw yellow to dark red.
Storage, Shipping and Shelf Life:	Store in a refrigerator at -20℃ (frost-free function off) or a -80℃ freezer for up to **2 years.** Ship with dry ice.
Protein Concentration	Refer to bottle label or lot-specific COA
Proteins Contained	Fibronectin, vitronectin, laminin, collagen and other undefined protein contents.
Endotoxin:	<4 EU/mL
RNA/DNA	Not treated by RNase or DNase. Contains trace amounts of DNA and RNA.
Performance Testing:	Protein Concentration: >8mg/mL for GelNest™ Matrix other than High

Head Office No. 530, Xida Road, Meicun Industrial Park, Xinwu District, Wuxi, Jiangsu, China
Tel：+86+ 510-6800 6788 Email：info@nest-wuxi.com
Online：www.cell-nest.com

Oversea NEST USA (New Jersey/ Phoenix)
NEST scientific 株式会社 (Yokohama,Japan)
NEST Scientific Europe B.V (Netherlands)
Nest Scientific (MENA) FZE (Sharjah，United Arab Emirates)

	Concentration (HC); >18mg/mL for HC GelNest™ Matrix.
	Gelation time <30 minutes Glue Stability (37℃, 14 days) LDEV: tested PCR negative Fungi, bacteria and mycoplasma: tested negative Organoid growth verified Nerve axon growth verified
Features:	1. **High-concentration** GelNest™ matrix is suitable for in vivo application studies, such as tumor growth promotion. The high protein concentration can also help the GelNest™ matrix remain intact after being injected subcutaneously into mice, which is beneficial for the in-situ maintenance of injected tumor cells and/or angiogenic factors, making it suitable for in situ analysis and/or subsequent removal. 2. For the preparation of a more defined basement membrane coating, it is recommended to use **growth factor reduced** matrix gel. 3. For experiments involving color detection, it is recommended to use **phenol red-free** GelNest™ matrix, such as using fluorescent dyes or Drabkins method to count endothelial cell tube formation experiments. For endometrial cell culture, phenol red-free GelNest™ matrix should also be used. In addition, phenol red has a similar structure to non-steroid estrogen and has estrogen-like effects. It may have the ability to interfere with endocrine and hormone metabolism in experimental animals. 4. **Thin gel** is mainly used to assist cell attachment, which is beneficial for cell proliferation. For example, for primary cell culture, a thin layer of protein is needed for assistance, so thin gel can be chosen; **thick gel** is mainly used for 3D cell culture, such as rat aorta tissue differentiation into capillary-like structures (Ring Assay), and cell invasion experiments, etc.; 3D cell culture experiments are mainly used to study the interaction between cells and complex structures such as biological tissues.

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ISO9001 & ISO13485 & ISO11137

Coating Recommendations

Application Type	Dilution Factor	Final Concentration	Volume Added	Experiments
Thin Gel	1:10	>1mg/mL	50μL/cm^2	2D primary cell culture
	1:50	>0.1mg/mL		Invasion assay with cell culture inserts
	1:100	>0.01mg/mL	300μL/cm^2	Stem cell culture
Thick Gel	Gel : Cell Mixture<7:3	>7mg/mL	150-200μL/cm^2	Organoid culture
	No Dilution	>10mg/mL		Angiogenesis

Product Specifications

Cat.No.	Description	Application	Packaging
211212	GelNest™ Matrix	General 2D, 3D cell culture	5 mL/bottle, 1 bottle/pk
211222	GelNest™ Matrix, without Phenol Red	Colorimetric identification (such as fluorescence) or sensitive to steroids; Invasion assay (Transwell)	5 mL/bottle, 1 bottle/pk
211232	GelNest™ Matrix, low growth factor	2D, 3D cell culture with higher accuracy requirements for matrix components and requires	5 mL/bottle, 1 bottle/pk
211242	GelNest™ Matrix, low growth factor, without Phenol Red	Colorimetric identification (such as fluorescence) or sensitive to steroids	5 mL/bottle, 1 bottle/pk
211252	GelNest™ Matrix, high concentration	In vivo tumor formation, angiogenesis experiment, general cell culture, etc.	5 mL/bottle, 1 bottle/pk
211262	GelNest™ Matrix, high concentration, without Phenol Red	Colorimetric identification (such as fluorescence) or sensitive to steroids	5 mL/bottle, 1 bottle/pk
211272	GelNest™ Matrix, for stem cell culture, with Phenol Red	hESC stem cell culture	5 mL/bottle, 1 bottle/pk
211282	GelNest™ Matrix, for organoid	Organoid culture and differentiation	5 mL/bottle, 1

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	culture, without Phenol Red		bottle/pk
211492	GelNest™ Matrix, for Angiogenesis Experiment, with Phenol Red	Optimized for angiogenesis experiments	5 mL/bottle, 1 bottle/pk

Safety recommendations and limitations

For research use only. Not intended for diagnostic or therapeutic purposes. Contains ingredients of animal origin.

Technical support and contact information

For FAQ, GelNest™ Matrix Selection Guide, Quality Assurance COA/COC or other technical support and product issues, please refer to our website:

https://www.nestscientificusa.com/product/detail/636882319776419840.

Product Appearance

Product overall appearance

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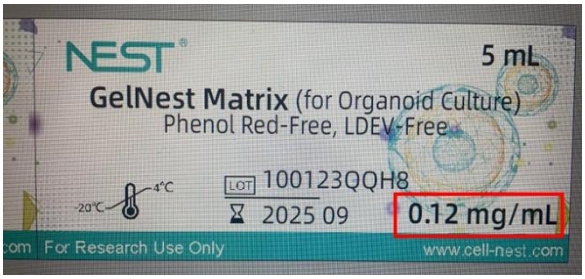
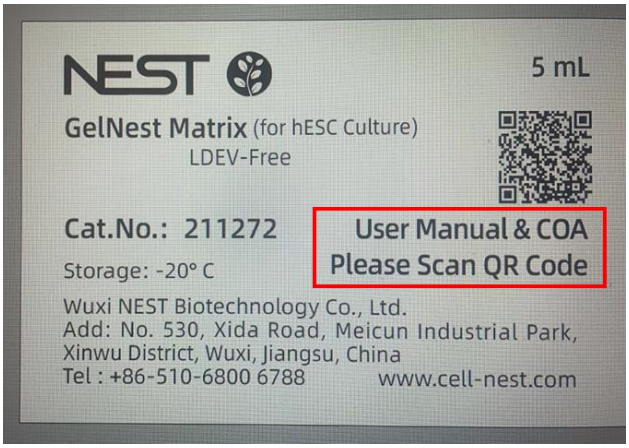


Bottle label (with protein concentration)



Bag label (with QR code for user manual and COA)

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