bioGenous™ EasyGel 3D ECM (Reduced Growth Factor)

Catalog: M315077

Product Description

Basement membranes are thin continuous layers of specialized extracellular matrix that form the interface on which epithelial, endothelial, or neuronal cells grow. Basement membranes also support muscle and Schwann cells of the peripheral nerves as they are found surrounding these cells. bioGenous™ EasyGel 3D ECM is a soluble form of basement membrane extracted and purified from the Engelbreth-Holm-Swarm (EHS) tumor. The major constituents of the bioGenous™ EasyGel 3D ECM include laminin, collagen IV, entactin/nidogen, and heparin sulfate proteoglycan.

bioGenous™ EasyGel 3D ECM is a reduced growth factor hydrogel specifically optimized for rapid organoid construction. bioGenous™ EasyGel 3D ECM allows the complete control of the organoid culture microenvironment to allow for more consistent cell growth and reproducible experiments. It supports the growth and maintenance of human embryonic stem cells (hESCs), tissue-derived stem cells, and for the in vivo study of both healthy and tumor organoids derived from various organs. bioGenous™ EasyGel 3D ECM is compatible with all culture media and gels at temperatures above 10°C to form a reconstituted basement membrane. Notably, bioGenous™ EasyGel 3D ECM is highly suitable for PDX-derived organoid (PDXO) models, providing an optimal scaffold for tumor cells isolated from patient-derived xenografts to maintain their original histological architecture, phenotypic traits, and genetic stability.

Product Information

⚠ bioGenous™ EasyGel 3D ECM will start to gel if kept above 10°C for an extended period. We recommend to make aliquots and store at –80°C to –20°C to avoid repeated freeze-thaw cycles.

Component	Cat#	Volume	Concentration	Storage& Stability
bioGenous™ EasyGel 3D ECM (Reduced Growth Factor)	M315077	10 mL	8.5-9.5 mg/mL	-20°C, 30 months

Directions for Use

⚠ This product is for research use only.

1. Place the bioGenous™ EasyGel 3D ECM on crushed ice or in an ice–water mixture (liquid level above the ECM) and thaw at 4°C refrigerator for at least 12 hours. After thawing, gently swirl to ensure a uniform liquid without phase separation or precipitates.
2. After the bioGenous™ EasyGel 3D ECM has been completely thawed, gently swirl the vial to mix the contents while keeping it on ice at all times.
3. If working with small volumes, aliquot the bioGenous™ EasyGel 3D ECM by gently pipetting it into pre-chilled tubes on ice, and immediately store any remaining volume at -20°C.
   ***Note**: All cultureware, including pipettes and centrifuge tubes, should be pre-chilled or kept ice-cold to prevent the bioGenous™ EasyGel 3D ECM from solidifying. If solidification occurs, the matrix can be re-liquified by placing it at 4℃ on ice for 24-48 hours.*
4. The volume ratio of EasyGel 3D ECM should be maintained at over 70% to ensure the structural stability of the ECM during the culture process.
   ***Note**: Excessive dilution of bioGenous™ EasyGel 3D ECM below 50% dilution may result in an extremely thin and fragile non-gelled protein layer that cannot support continuous organoid growth.*
5. Dispense the required volumes of the ECM-cell mixture in the well.
6. Incubate the plates at 37°C for 15-20 min and then add the appropriate volume of a pre-warmed growth medium for the specific organoid type.

Directions on Coating

bioGenous™ EasyGel 3D ECM (Reduced Growth Factor) could be used in the preparation of thin Gel, thick gel, or thin coating. Thin Gel preparations allow cells to be cultured on top of the gel while the Thick Gel enables the growth of cells within a three-dimensional matrix. Thin Coating could also be done to support cell growth on top of a complex protein layer.

Thin Gel

1. Thaw the required amount of bioGenous™ EasyGel 3D ECM.
2. Gently mix the bioGenous™ EasyGel 3D ECM, taking care to avoid introducing bubbles into the gel.
3. Add 50 μL/cm^2 bioGenous™ EasyGel 3D ECM to the pre-chilled culture plate.
4. Incubate the plates at 37°C for 30 min.
5. Aspirate any unbound gel from the surface of the plate and rinse once with Basal organoid medium. Ensure that the tip of the pipet does not scratch the coated surface.

Thick Gel

1. Thaw the required amount of bioGenous™ EasyGel 3D ECM.
2. Gently mix the bioGenous™ EasyGel 3D ECM, taking care to avoid introducing bubbles into the gel.
3. Add the recommended number of cells to the bioGenous™ EasyGel 3D ECM on ice, and dispense 150-200 μL/cm^2 onto the growth surface.
4. Incubate the plates at 37°C for 30 min.
5. Add culture medium and incubate at 37°C. Cells may also be cultured on top of this gel.

Thin Coating Method

1. Thaw the required amount of bioGenous™ EasyGel 3D ECM.
2. Gently mix the bioGenous™ EasyGel 3D ECM, taking care to avoid introducing bubbles into the gel.
3. Using Basal organoid medium, dilute the bioGenous™ EasyGel 3D ECM. It is necessary to optimize the dilution media to determine the optimal concentration for your investigation.
4. Dispense enough diluted bioGenous™ EasyGel 3D ECM to cover the entire growth surface.
5. Incubate the plates at room temperature for 60 min.
6. If any unbound materials remain, aspirate and rinse gently using the Basal Organoid Medium.
   ***Note**: If gel-coated plates are not used immediately after coating, add PBS to prevent evaporation and store at 4°C for up to 5-10 days*.

Quality Control

All components are negative for bacterial and fungal contamination. Certificate of authenticity (COAs) for all other products are available upon request.

Safety Information

For research use only, not for use in diagnostic procedures. Read the Safety Data Sheets (SDSs) and follow the manufacture's instruction.

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Contact and Support

For questions, suggestions, and technical supports, please contact us at E-mail: info@biogenous.cn.

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