Corning® Matrigel® Matrix For Organoid Culture

CORNING

Organoids have become increasingly popular in disease modeling and drug discovery as they resemble the composition and functionality of organs. Extracellular matrix (ECM) is an important component of the cell niche that provides biochemical cues and structural support, such as porosity and stiffness which mediates signaling for cell migration, cell behavior and polarization in organoid structures[1,2].

Corning Matrigel matrix for organoid culture is an optimized matrix that has been verified to support organoid growth and differentiation. It provides the consistency and reliability needed for successful organoid culture by employing the following steps:

- Verified to support growth and differentiation of organoid cultures including:
  - Long-term expansion of mouse small intestinal organoids for more than 7 passages with typical organoid budding morphology and marker expression[3].
  - Growth and differentiation of polarized 3D epithelium from primary human airway epithelial cells expressing typical markers[4].
- Each lot is measured for its elastic modulus, indicative of matrix stiffness that supports an organoid workflow.
- Each lot is qualified to form stable "3D dome" structures commonly used in organoid culture.
- Demonstrated to successfully grow organoids from both healthy and diseased cell origins[4].

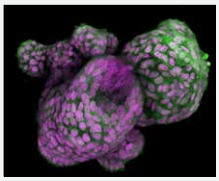
As an optimized matrix, Corning Matrigel matrix for organoid culture reduces the need for time-consuming screening, while providing the reproducibility and consistency essential for organoid research.

Application Areas

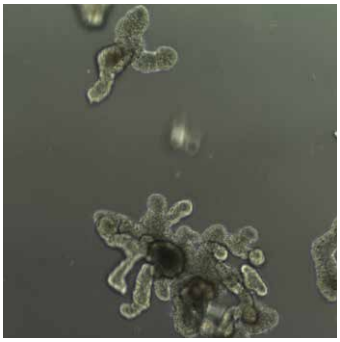
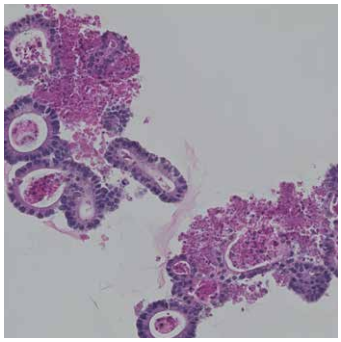
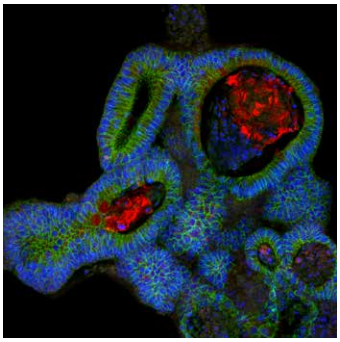
Growth and differentiation of organoids.

Organoids support advancements in the study of organogenesis, disease modeling, and subsequently patient-specific therapies. Stem cells and/or organ progenitors from normal or diseased tissue are mixed with Corning Matrigel matrix to create mini-organs of the kidney, thyroid, liver, brain, lung, intestine, prostate, pancreas, breast, esophagus, and ovary.

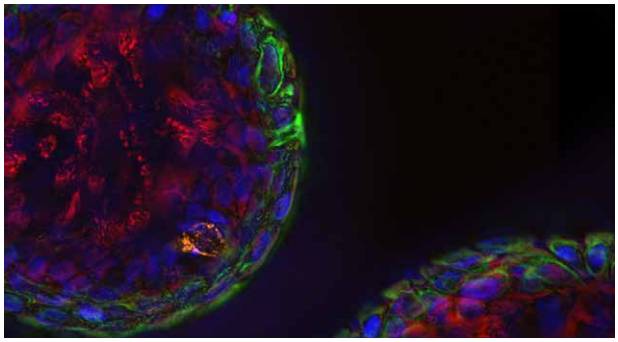
Corning Matrigel matrix is the most published hydrogel for organoid research due to its close resemblance to an *in vivo* environment, providing necessary growth factors, proteins, and the required matrix architecture.



Corning is collaborating with Hubrecht Organoid Technology (HUB), a pioneer institute that amplifies the work of Prof. Hans Clevers, whose lab published a landmark paper demonstrating the development of gastrointestinal organoids from single Lgr5+ stem cells. This collaboration brings together the expertise HUB has in generating organoid *in vitro* models and mimicking organ functionality with the knowledge Corning has in optimizing tools for organoid environments. Working together, the goal is to provide our research community with better tools and resources for organoid applications and to further the science of organoid models.

Intestinal organoids grown in Corning Matrigel matrix for organoid culture show typical budding morphology and marker expression (Vimentin, Mucin-2, Villin, Chromogranin, and Lysozyme)[3].



Airway organoids grown in Corning Matrigel matrix for organoid culture shown to express typical differentiation markers of basal (green), ciliated (red) and goblet (orange) cells[4].

Ordering Information

Cat. No.	Description	Qty/Pk	Qty/Cs
356255	Corning® Matrigel® matrix for organoid culture, phenol red-free, LDEV-free, 10 mL	1	1

References

1. Hartman CD, et al. Extracellular matrix type modulates cell migration on mechanical gradients. Experimental Cell Research, 359(2):361-366, 2017.
2. Bryant DM, et al. A molecular switch for the orientation of epithelial cell polarization. Dev Cell. 2014 Oct 27;31(2):171-87.
3. Application Note (Corning Lit. Code CLS-AN-542): Culture of mouse intestinal organoids in Corning Matrigel matrix for organoid culture.
4. Application Note (Corning Lit. Code CLS-AN-534): High throughput gene expression analysis of 3D airway organoids.

For more specific information on claims, visit the Certificates page at **www.corning.com/lifesciences**.

Warranty/Disclaimer: Unless otherwise specified, all products are for research use only. Not intended for use in diagnostic or therapeutic procedures. Not for use in humans. Corning Life Sciences makes no claims regarding the performance of these products for clinical or diagnostic applications.

For additional product or technical information, visit **www.corning.com/lifesciences** or call 800.492.1110. Outside the United States, call +1.978.442.2200 or contact your local Corning sales office.

CORNING

Corning Incorporated
Life Sciences
836 North St.
Building 300, Suite 3401
Tewksbury, MA 01876
t 800.492.1110
t 978.442.2200
f 978.442.2476
www.corning.com/lifesciences

ASIA/PACIFIC
Australia/New Zealand
t 61 427286832
China
t 86 21 3338 4338
f 86 21 3338 4300
India
t 91 124 4604000
f 91 124 4604099
Japan
t 81 3-3586 1996
f 81 3-3586 1291
Korea
t 82 2-796-9500
f 82 2-796-9300
Singapore
t 65 6572-9740
f 65 6735-2913
Taiwan
t 886 2-2716-0338
f 886 2-2516-7500

EUROPE
CSEurope@corning.com
France
t 0800 916 882
f 0800 918 636
Germany
t 0800 101 1153
f 0800 101 2427
The Netherlands
t 020 655 79 28
f 020 659 76 73
United Kingdom
t 0800 376 8660
f 0800 279 1117
All Other European Countries
t +31 (0) 206 59 60 51
f +31 (0) 206 59 76 73

LATIN AMERICA
grupoLA@corning.com
Brasil
t 55 (11) 3089-7400
Mexico
t (52-81) 8158-8400