



CORNING

Break the 3D barrier

VESSELS	SURFACES	MEDIA
CORNING 3D CELL CULTURE		



“We design and develop 3D bioprinted human tissue for use in preclinical drug safety testing, transporter assessment, disease modeling, and therapeutic applications. The flexibility of Corning Transwell® formats, pore sizes, and membrane materials allows us to select the most optimal *in vitro* environment for the variety of tissue types that we print.”

Scott Leroy, Ph.D.

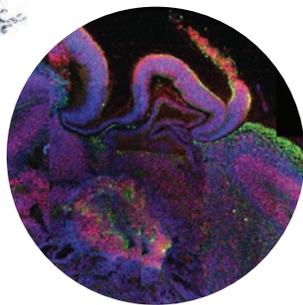
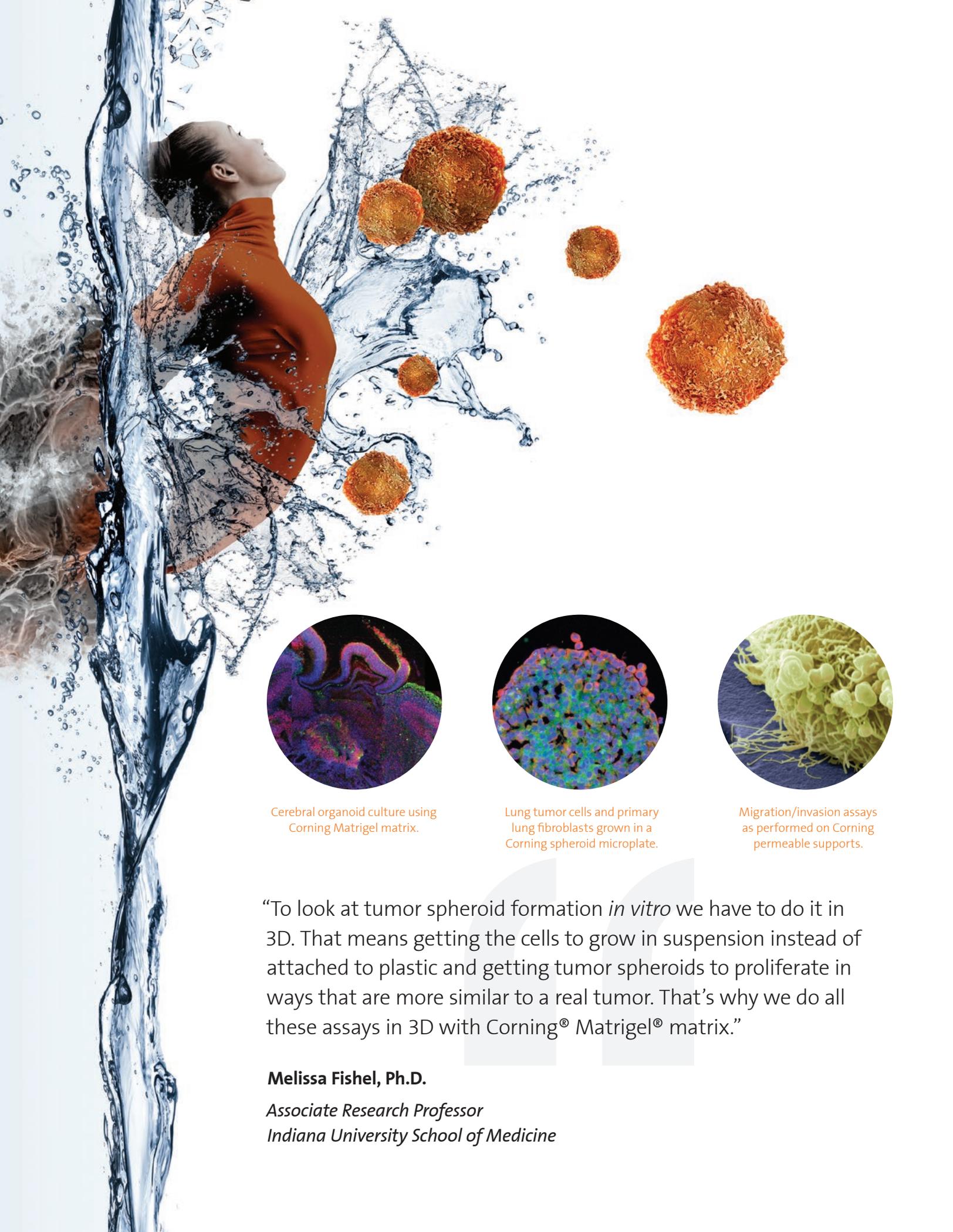
Vice President, Operations
Organovo

Get there fast with 3D cell culture.

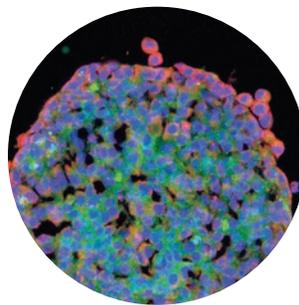
Whether you're just getting started in 3D cell culture, looking for proven ways to scale up, or moving to high throughput screening, Corning can help you break through the barriers to creating more *in vivo*-like environments and predictive models. Quickly and efficiently.

For more than 25 years, Corning has delivered innovations that have advanced the science of 3D cell culture. We pioneered the development of novel tools providing easier access to *in vivo*-like 3D models, such as Corning **Matrigel® matrix** and **Transwell®** permeable supports. And we continue to support you with a diverse and evolving portfolio of innovative 3D cell culture products, solutions, protocols, and expertise. Corning is committed to working with you in critical areas like cancer biology, tissue engineering, and regenerative medicine – to help you bring safe, effective drugs and therapies to market in less time with greater certainty.

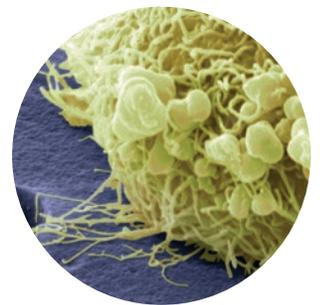
Whatever your application, we have the body of 3D cell culture knowledge and depth of resources to help you achieve your goals. It's no wonder so many scientists working in academic and biopharma labs look to Corning for solutions, guidance, and support when it's time to get started in 3D cell culture.



Cerebral organoid culture using Corning Matrigel matrix.



Lung tumor cells and primary lung fibroblasts grown in a Corning spheroid microplate.



Migration/invasion assays as performed on Corning permeable supports.

“To look at tumor spheroid formation *in vitro* we have to do it in 3D. That means getting the cells to grow in suspension instead of attached to plastic and getting tumor spheroids to proliferate in ways that are more similar to a real tumor. That’s why we do all these assays in 3D with Corning® Matrigel® matrix.”

Melissa Fishel, Ph.D.

*Associate Research Professor
Indiana University School of Medicine*

“We’re very excited about advances in oncology. Not only is it easy to grow the spheroids in the Corning® spheroid microplate, but they can be used to look at tumor metastasis in a more *in vivo*-like way. By simply adding an appropriate Corning Matrigel® matrix, researchers can then introduce metastatic drugs to start an invasion assay.”

Brad Larsen

*Principal Scientist Applications Group
BioTek Instruments, Inc.*

2D or 3D? It’s no longer a question.

Why have so many research scientists embraced 3D cell culture? Because cells grown in 3D more closely mimic *in vivo* behavior in tissues and organs than cells grown in a 2D culture model. 3D cell culture environments create more biologically relevant models for drug discovery which may lead to more predictive results, higher success rates for drug compound testing, a faster path to market, and reduced development costs.

Attribute	2D	3D
Growth Substrate	Rigid, inert	Mimics natural tissue environment
Cell Shape Growth	Loss of cell polarity and altered shape	Maintains <i>in vivo</i> -like morphology and polarity
Architecture	Not physiological, cells partially interact	Physiological, promotes close interaction between cells, ECMS, and growth factors
Growth Factor Diffusion	Rapid	Slow – biochemical gradients regulate cell-to-cell communication and signaling
Gene Expression	Different patterns of gene expression	Maintenance of <i>in vivo</i> -like expression patterns

Corning 3D cell culture: Decades of experience with proven results.

Spheroid Microplates with ULA Surface

Corning spheroid microplates combine Corning's Ultra-Low Attachment (ULA) surface with an innovative well geometry to create an ideal tool for generating, culturing, and assaying 3D multicellular spheroids in the same microplate. The ULA coating attached to the interior surface of the Corning spheroid microplate well bottom enables highly reproducible growth of 3D cell spheroid cultures. 96-well and 384-well automation-friendly formats make it easier to generate spheroid models in a format suitable for high throughput screening (HTS) platforms.



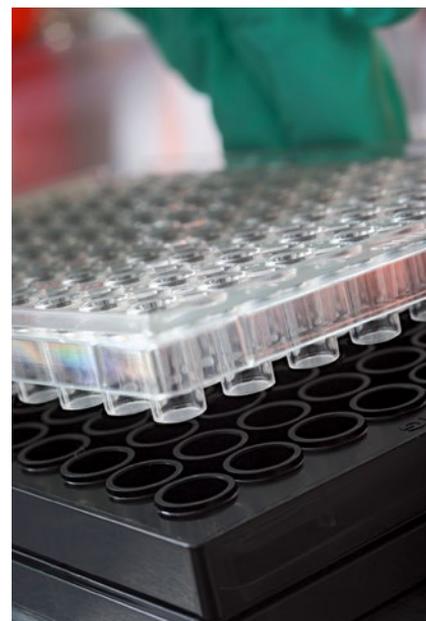
Matrigel® Matrix, ECMs, and Scaffolds

Corning® Matrigel matrix is an ECM-based hydrogel – proven and trusted since 1985 – that is suitable for a variety of cell types and functions. Matrigel matrix is a reconstituted basement membrane extract from Engelbreth-Holm-Swarm (EHS) mouse tumors and contains the prominent ECM molecules found in basement membrane. These components promote cellular functions that can support viability, proliferation, function, and development of many cell types, as well as subsequent cellular responses that are more physiologically relevant compared to cells grown in a 2D environment. Corning also offers other natural ECMs including collagen, laminin, and fibronectin.



Permeable Supports

Corning permeable supports are available in a variety of formats, pore sizes and membrane types. Transwell® and Falcon® permeable supports are widely used in complex cell culture models such as multi-layered tissues (skin, liver, kidney, human airway epithelia), migration/invasion assays, and co-culture applications. The unique design makes it possible to feed cells apically and basolaterally when growing cells to mimic the *in vivo* environment.





What's next?

In the complex research world, Corning is an experienced and reliable partner committed to working with you to help shape the future of 3D cell culture. Together.

Get real with Corning 3D Cell Culture.

Find out how Corning can help you create more *in vivo*-like 3D models, conduct more biologically relevant experiments, and better predict how your next discovery will behave in the real world.

Visit corning.com/3D.

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

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