Break the 3D barrier

Get there fast with 3D cell culture

By Elizabeth Abraham, Sheila Carvalho, and Nicole Athanas

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 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.

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 *in vivo*-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 *in vivo*-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.

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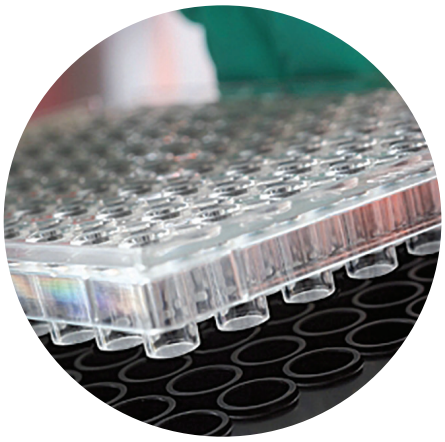
Matrigel® Matrix, ECMs, and Scaffolds

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.

Description	Size	Cat. No.	Unit
Corning® Matrigel® Media			
Basement Membrane Matrix (GFR), Phenol Red-Free, LDEV-Free	10 mL	**47743-722**	**Each**
Basement Membrane Matrix (GFR), LDEV-Free	10 mL	**47743-720**	**Each**
Basement Membrane Matrix, LDEV-Free	10 mL	**47743-715**	**Each**
Corning® Ultra-Low Attachment Spheroid Microplates			
Black with Clear Round Bottom Microplates, Individually Packed, with Lid, Sterile	96-Well	**10037-558**	**Cs. 50**
Black Clear Round Bottom Microplates, Bulk Packed 10 per Bag, with Lid, Sterile	384-Well	**10037-556**	**Cs. 50**
Costar® Transwell® Permeable Supports			
Permeable Support PC Membrane, Sterile	6.5 mm Insert/8.0 µm Pore Size	**29442-120**	**Cs. 48**
Permeable Support with PET Membrane, Sterile	6.5 mm Insert/0.4 µm Pore Size	**29442-082**	**Cs. 48**
Permeable Support with PET Membrane, Sterile	12 mm Insert/0.4 µm Pore Size	**29442-078**	**Cs. 48**



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