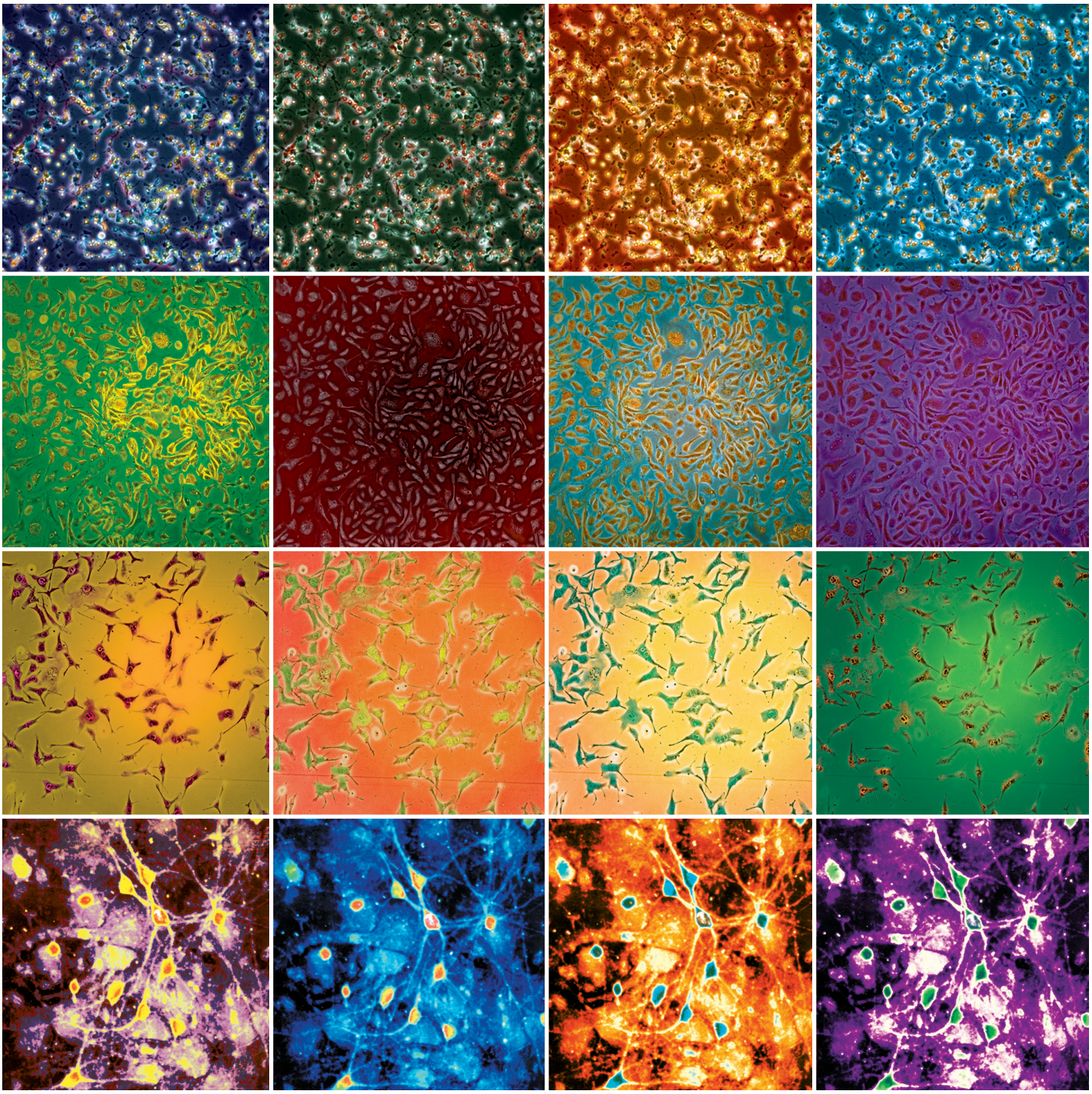
# Corning® BioCoat® Cultureware

CORNING



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## Product Ordering Information

For information on Purchasing Options, Terms and Conditions of Sale, Return and Repair Policies, and Warranty/Guarantee Registration, visit our website at **www.corning.com/how-to-buy.**

*Products may not be available in all markets.*

# Introduction

The development and normal functioning of cells depends on interactions with molecules in their micro-environment. The major classes of molecules that regulate cellular development and function include growth and differentiation factors, cell adhesion molecules, and the components of the extracellular matrix (ECM). The ECM is composed of a number of different macromolecules whose structural integrity and functional composition are important in maintaining normal tissue architecture, in development and in tissue-specific function. The ECM exerts influences on behavior (adherence, spreading, differentiation, and migration) and the pattern of gene expression of the cells in contact with it. The ECM, however, is not static but changes during both normal development and in tissue repair and regeneration and is intimately involved in both normal biological function and response to injury*.

To create physiologically relevant *in vitro* models that support normal cell culture and function, the components of the *in vivo* environment must be incorporated. The use of an ECM as a coating for tissue culture surfaces permits the development of model systems which closely mimic *in vivo* conditions. The choice of ECM is an important component to consider when optimizing *in vitro* culture systems.

## Corning® BioCoat® Cultureware

Corning BioCoat cultureware is a unique line of tissue culture vessels with various ECM components applied to vessel surfaces by a proprietary manufacturing process. The result is a uniform, optically clear matrix substrate. This technology, together with our exacting quality control, guarantees the performance of each lot, as well as consistency from lot-to-lot.

Corning BioCoat cultureware promotes cell attachment, spreading, growth, and differentiation of a variety of primary cells and cell lines in serum-free or serum-containing cultures.

## Applications include:

- Cell adhesion and co-culture assays
- Receptor-ligand-binding assays
- Routine drug screening assays
- Studies of tissue morphogenesis
- Studies of cell-matrix interactions
- Regulation of signal transduction and gene expression
- Cell migration and invasion assays
- Angiogenesis studies
- Studies of transport and permeability

## Get the Corning BioCoat Advantages

### Ready-to-Use Convenience

Spend more time performing your experiments rather than preparing for them. Precoated BioCoat cultureware saves time and labor costs while increasing productivity.

### Quality Assurance Testing

BioCoat cultureware is thoroughly tested for bioactivity and guaranteed to perform as claimed so you can use with complete confidence.

### Reliable Performance

BioCoat cultureware improves cell attachment and increases proliferation rates for a variety of normal and transformed cells.

### Lot-to-Lot Consistency

Corning prides itself on maintaining a Quality Management System which meets the requirements of ISO 9001, and production environments that are cGMP compliant.

### Wide Selection

Available with a wide range of ECM proteins and attachment factors, BioCoat cultureware helps optimize conditions for attachment, growth, or differentiation for your cell type.

### Readily Available

BioCoat cultureware is available from stock for immediate shipments.

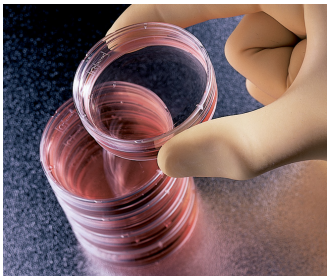
*Alberts B, et al. Mol. Bio. of the Cell (Third Edition). Garland Publishing, NY (1994).

# Corning® BioCoat® Cultureware Vessel Options

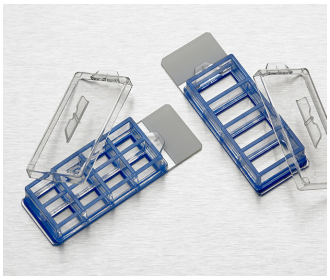
Corning is a world leader in providing researchers with top-quality cell culture products. Corning BioCoat cultureware is manufactured to ensure consistent, reliable results. Trust Corning, the first name in cell culture.

**Flasks** are available in various sizes and designs to meet all of your cell culture needs in standard, plug-seal, and vented cap options.

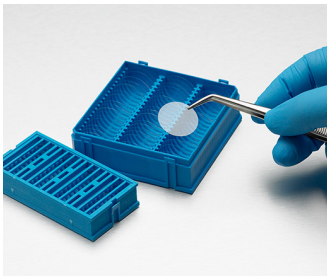
**Multiwell Plates** are manufactured using a crystal-grade polystyrene and feature a proprietary labyrinth lid, condensation rings, and deep well design to reduce evaporation while minimizing edge effects and risk of contamination.



**Dishes** are exceptionally flat for distortion-free optics and feature stacking rings for easier stacking and handling.

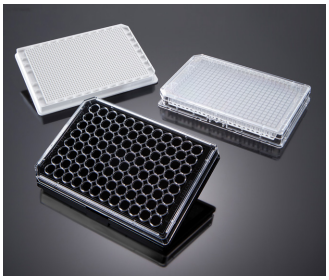


**CultureSlides** have an innovative sealing design that minimizes leakage and a plastic chamber affixed to a specially cleaned glass slide that can be removed with an easy-to-use disposable safety removal tool.



**Coverslips** are No. 1 German glass and provide an optically clear surface which is non-neurotoxic and exhibits low background fluorescence. The convenient package also acts as a storage container and allows for easy coverslip manipulation.

**Cell Culture Inserts** contain a microporous membrane that mimics the *in vivo* cell environment by allowing cells to be fed both apically and basolaterally. Corning BioCoat inserts come in a variety of formats, membrane types, and surfaces.



**Microplates** have been further enhanced (versus TC) with biological coatings of highly purified extracellular matrix (ECM) proteins. It features superior lot-to-lot and intra-well consistency, minimized cross-talk, versatility of plate colors, and a stackable design.

# Corning® BioCoat® Manufacturing Facilities

Corning has a highly controlled manufacturing environment for Corning BioCoat products and are produced under aseptic conditions. ISO certification verifies that the facility meets international quality standards and that Corning provides assurance to customers that it is totally committed to delivering superior quality and product improvements.

All Corning BioCoat products are produced under aseptic conditions to minimize the risk of product contamination from bacteria, fungi, and particulates.

Proprietary manufacturing technology, validated procedures, and strict compliance with established protocols, combined with Corning exacting quality control, assure the biological performance of each lot, as well as consistency from lot-to-lot.

Proprietary formulation and manufacturing techniques allow Corning to produce room temperature Collagen I, Gelatin, and Poly-Lysine cultureware. Extensive accelerated and real-time studies in the laboratory have confirmed product performance for at least one year under dry conditions at temperatures from 4°C to 30°C.

# Corning® BioCoat® Collagen I Cultureware

Collagen I, found in most tissues and organs, is most plentiful in dermis, tendon, and bone. It is an integral part of the framework that holds cells and tissues together and has been recognized as a useful matrix for improving cell culture. *In vitro* use of collagen can exert effects on the adherence, morphology, growth, migration, and differentiation of a variety of cell types[1]. Formats range from flasks and dishes to 96- and 384-well microplate formats to support higher throughput screening and evaluations (HTS).

## Applications include:

- Promotion of cell attachment and spreading
- Rapid expansion of cell populations
- Serum-free or reduced serum culture
- Cell adhesion assays
- Improving survival of primary cells in culture

## HTS applications:

- Ion channel activities (HTS)
- Receptor binding (HTS)
- Cell adhesion kinetics (HTS)
- Assays including better cytotoxicity, reporter gene, apoptosis, cell proliferation and calcium flux (HTS)

## Has been used to culture:

- Primary murine cardiac myocytes[2]
- Human vascular SMC[3]
- PC12 cells and SH-SY5Y cells[4]
- Mouse primary keratinocytes[5]
- SK-MEL-28-N1 cells[6]
- Murine myoblast C2C12 cells[7]
- HUVEC[8]
- HEK-293 cells[9]
- Rat Kupffer cells[10]
- MDA-231 breast cancer cells[11]

## Source

Rat tail tendon

## Quality Control

- Tested for ability to promote attachment and spreading of HT-1080 human fibrosarcoma cells
- Tested and found negative for bacteria and fungi
- Collagen I purity >90% by SDS-PAGE

## Storage

4°C to 30°C under dry conditions.

## Ordering Information

### Multiwell and Assay Plates

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354400 | 6-well | 5 |
| 356400 | 6-well | 50 |
| 354500 | 12-well | 5 |
| 356500 | 12-well | 50 |
| 354408 | 24-well | 5 |
| 356408 | 24-well | 50 |
| 354505 | 48-well | 5 |
| 356505 | 48-well | 50 |
| 354407 | 96-well clear | 5 |
| 356407 | 96-well clear | 50 |
| 356698 | 96-well clear | 80 |
| 354649 | 96-well black/clear | 5 |
| 356649 | 96-well black/clear | 50 |
| 4582 | 96-well half area black/clear glass bottom | 10 |
| 354650 | 96-well white/clear | 5 |
| 356650 | 96-well white/clear | 50 |
| 354519 | 96-well white | 5 |
| 356519 | 96-well white | 50 |
| 354666 | 384-well clear | 5 |
| 356666 | 384-well clear | 50 |
| 354667 | 384-well black/clear | 5 |
| 356667 | 384-well black/clear | 50 |
| 356705 | 384-well black/clear | 80 |
| 4583 | 384-well black/clear glass bottom | 10 |
| 354664 | 384-well white/clear | 5 |
| 356664 | 384-well white/clear | 50 |
| 354665 | 384-well white | 5 |
| 356665 | 384-well white | 50 |

### Culture Dishes

| | | |
|---|---|---|
| 354401 | 60 mm | 20 |
| 356401 | 60 mm | 100 |
| 354450 | 100 mm | 10 |
| 356450 | 100 mm | 40 |
| 354551 | 150 mm | 5 |

### Flasks

| | | |
|---|---|---|
| 354484 | 25 $cm^2$, vented-cap cap† | 10 |
| 356484 | 25 $cm^2$, vented-cap cap† | 50 |
| 354485 | 75 $cm^2$, vented-cap cap† | 5 |
| 356485 | 75 $cm^2$, vented-cap cap† | 50 |
| 354486 | 150 $cm^2$, vented-cap cap | 5 |
| 356486 | 150 $cm^2$, vented-cap cap | 40 |
| 354487 | 175 $cm^2$, vented-cap cap | 5 |
| 356487 | 175 $cm^2$, vented-cap cap | 40 |

### Coverslips

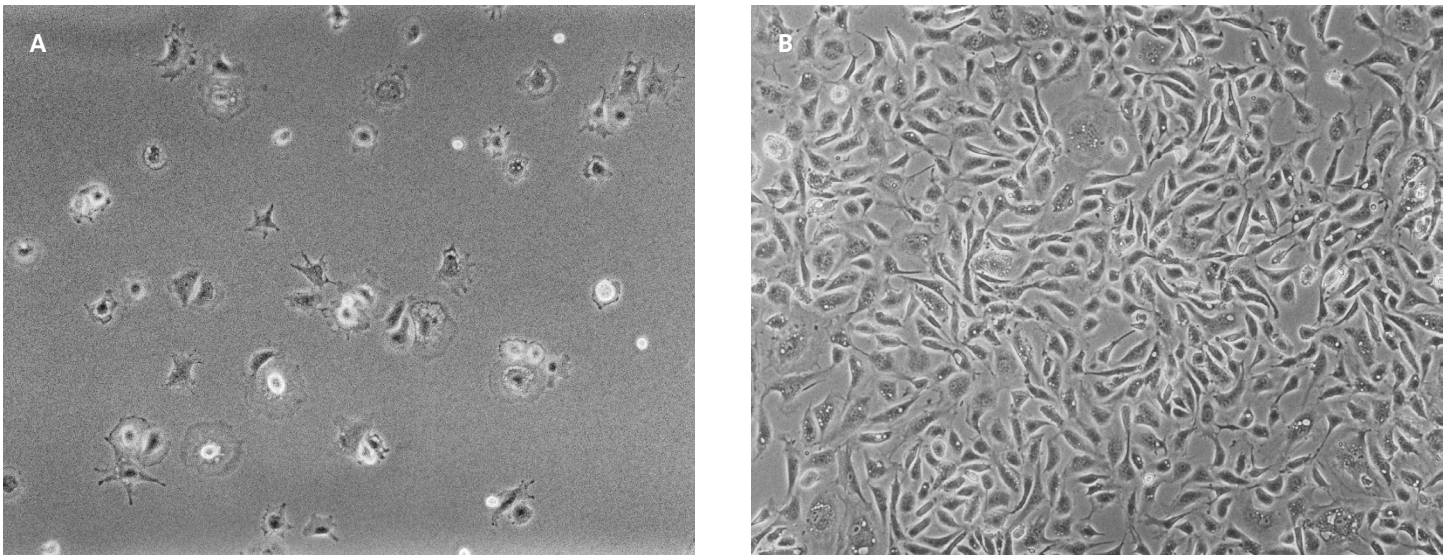
| | | |
|---|---|---|
| 354089 | 22 mm round No.1 German glass | 60 |

### CultureSlides

| | | |
|---|---|---|
| 354557 | 4-well | 12 |
| 354630 | 8-well | 12 |

†Corning BioCoat 25 $cm^2$ flasks are 70 mL canted neck; Corning BioCoat 75 $cm^2$ flasks are 250 mL canted neck.

# Corning® BioCoat® Collagen I Cultureware (continued)




**Effects of Corning BioCoat Collagen I cultureware on fetal bovine heart endothelial (FBHE) cells.** (A) FBHE cells grown for five days in basal medium containing 10% FBS on tissue culture plastic show sparse growth. (B) FBHE cells grown for five days using the Corning BioCoat Endothelial cell growth environment (Collagen I cultureware) form a confluent monolayer and show numerous mitotic cells.

# Corning® BioCoat® Gelatin Cultureware

Corning BioCoat Gelatin cultureware provides an attachment and growth promoting substrate for the culture of a variety of cell types. Gelatin is commonly used in the culture of vascular endothelial cells, muscle, embryonic stem (ES) cells, and F9 teratocarcinoma cells. It is also suitable for promoting adhesion of transfected cell types. Gelatin is a heterogeneous mixture of water-soluble proteins derived through the hydrolysis of Collagen.

## Applications include:

- Promotion of cell attachment and spreading
- Culture of normal and transfected F9 teratocarcinoma cells for gene expression studies[17]
- Culture of HUVEC for E-Selectin7 expression and VEGF induction

## Has been used to culture:

- HUVEC[18], BME[12], BAEC[13]
- ES cells[14]
- C2C12[15] and MM14[16] myoblasts
- Normal and transfected F9 teratocarcinoma cells

## Source

Gelatin, porcine

## Quality Control

- Tested for ability to promote proliferation of HUVECs
- Tested and found negative for bacteria and fungi

## Storage

4°C to 30°C under dry conditions.

## Ordering Information

### Multiwell and Assay Plates

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354652 | 6-well | 5 |
| 356652 | 6-well | 50 |
| 354689 | 96-well | 5 |
| 356689 | 96-well | 50 |

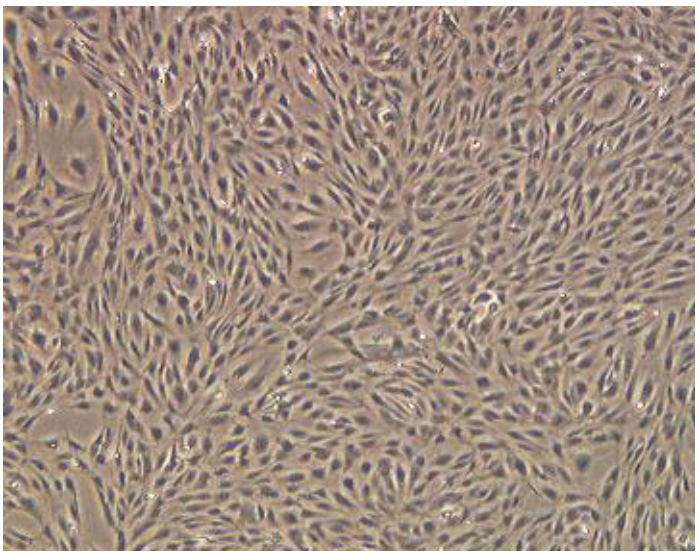
### Culture Dishes

| | | |
|---|---|---|
| 354653 | 100 mm | 10 |
| 356653 | 100 mm | 40 |

### Flasks

| | | |
|---|---|---|
| 354488 | 75 $cm^2$, vented-cap cap† | 5 |
| 356488 | 75 $cm^2$, vented-cap cap† | 50 |

†Corning BioCoat 25 $cm^2$ flasks are 70 mL canted neck; Corning BioCoat 75 $cm^2$ flasks are 250 mL canted neck.



**Effect of Corning BioCoat Gelatin cultureware on Human Umbilical Vein Endothelial Cells (HUVEC).** HUVEC grown for seven days on Corning BioCoat Gelatin 6-well multiwell plates seeded at a density of 2 x $10^4$ in the presence of Corning Endothelial cell culture medium.

# Corning® BioCoat® Poly-Lysine Cultureware

Poly-D-Lysine (PDL) and Poly-L-Lysine (PLL) are synthetic compounds that enhance cell adhesion and protein absorption by altering surface charges on the culture substrate. In addition to promoting cell adhesion, poly-lysine surface treatments support neurite outgrowth and improve the survival of many central nervous system (CNS) primary cells in culture. As PDL and PLL are synthetic molecules, they do not stimulate biological activity in the cells cultured on them, and they do not introduce impurities carried by natural polymers. Formats range from flasks and dishes to PDL 96- and 384-well microplate formats to support higher throughput screening and evaluations (HTS).

## Applications include:

- Attachment and spreading of a variety of cell types
- Cell differentiation and neurite outgrowth
- Attachment of fastidious transfected cell lines
- Support survival of primary neurons in culture
- Serum-free or reduced-serum culture

## HTS applications:

- Ion channel activities (HTS)
- Receptor binding (HTS)
- Cell adhesion kinetics (HTS)
- Assays including better cytotoxicity, reporter gene, apoptosis, cell proliferation and calcium flux (HTS)

## Has been used to culture:

- Primary mouse brain capillaries[19]
- HEK-293 cells[20-23]
- MDA-231 breast cancer cells[24]
- Mouse cerebellar granule neurons[25]
- Transfected rat 1 cells[26]
- Rat anterior pituitary cells[27]
- Transfected COS-7 cells[28]
- Transiently transfected primary rat astrocytes[29]
- Rat primary cerebellar granule neurons[30-31]
- Murine microglia MG-7 cells[32]

## Source

- PDL, synthetic (MW 75-150 kD)
- PLL, synthetic (MW 30-70 kD)

## Quality Control

- Tested for ability to promote firm attachment of RCG cells
- Tested and found negative for bacteria and fungi

## Storage

4°C to 30°C under dry conditions.

## Ordering Information

### Multiwell and Assay Plates

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354413 | 6-well | 5 |
| 356413 | 6-well | 50 |
| 354470 | 12-well | 5 |
| 356470 | 12-well | 50 |
| 354414 | 24-well | 5 |
| 356414 | 24-well | 50 |
| 354509 | 48-well | 5 |
| 356509 | 48-well | 50 |
| 354461 | 96-well clear | 5 |
| 356461 | 96-well clear | 50 |
| 354640 | 96-well black/clear | 5 |
| 356640 | 96-well black/clear | 50 |
| 4586 | 96-well half area black/clear glass bottom | 10 |
| 354651 | 96-well white/clear | 5 |
| 356651 | 96-well white/clear | 50 |
| 354620 | 96-well white | 5 |
| 356620 | 96-well white | 50 |
| 354662 | 384-well clear | 5 |
| 356662 | 384-well clear | 50 |
| 354663 | 384-well black/clear | 5 |
| 356663 | 384-well black/clear | 50 |
| 356697 | 384-well black/clear | 80 |
| 4587 | 384-well black/clear glass bottom | 10 |
| 354660 | 384-well white/clear | 5 |
| 356660 | 384-well white/clear | 50 |
| 354661 | 384-well white | 5 |
| 356661 | 384-well white | 50 |

### Culture Dishes

| | | |
|---|---|---|
| 354468 | 60 mm | 20 |
| 356468 | 60 mm | 100 |
| 354469 | 100 mm | 10 |
| 356469 | 100 mm | 40 |
| 354550 | 150 mm | 5 |

### Flasks

| | | |
|---|---|---|
| 354536 | 25 $cm^2$, vented-cap† | 10 |
| 356536 | 25 $cm^2$, vented-cap† | 50 |
| 354537 | 75 $cm^2$, vented-cap† | 5 |
| 356537 | 75 $cm^2$, vented-cap† | 50 |
| 354538 | 150 $cm^2$, vented-cap | 5 |
| 356538 | 150 $cm^2$, vented-cap | 40 |
| 354539 | 175 $cm^2$, vented-cap | 5 |
| 356539 | 175 $cm^2$, vented-cap | 40 |

### Coverslips

| | | |
|---|---|---|
| 354086 | 12 mm round No.1 German glass | 80 |

### CultureSlides

| | | |
|---|---|---|
| 354577 | 4-well | 12 |
| 354632 | 8-well | 12 |

# Corning® BioCoat® Poly-Lysine Cultureware (continued)

## Ordering Information

### Multiwell and Assay Plates

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354515 | 6-well | 5 |
| 356515 | 6-well | 50 |
| 354516 | 96-well clear | 5 |
| 356516 | 96-well clear | 50 |

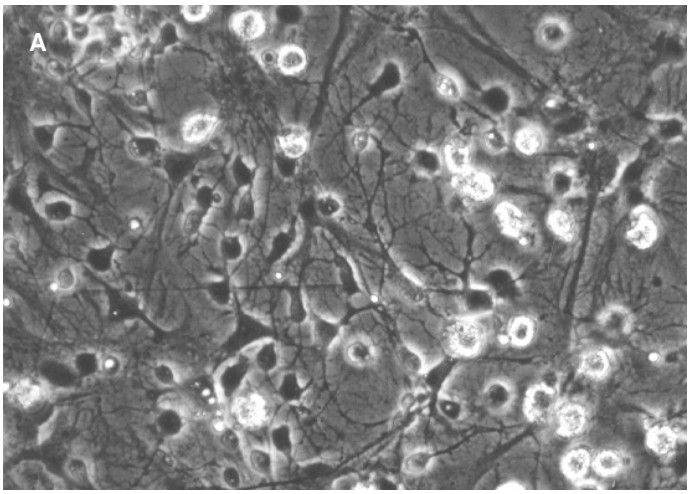
### Culture Dishes

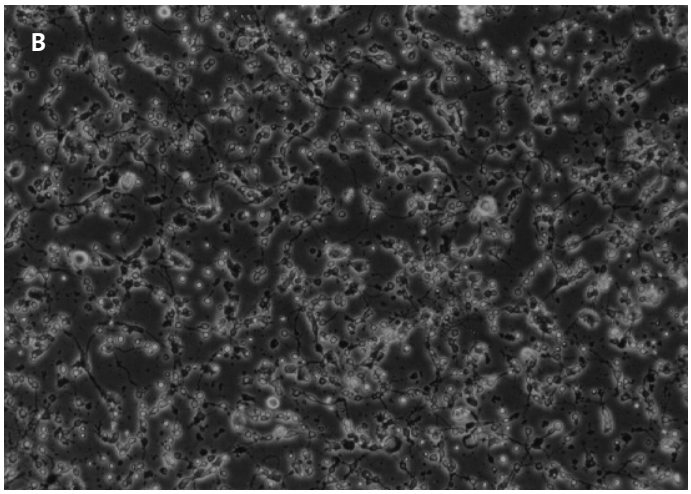
| | | |
|---|---|---|
| 354518 | 35 mm | 20 |
| 356518 | 35 mm | 100 |
| 354517 | 60 mm | 20 |

### Coverslips

| | | |
|---|---|---|
| 354085 | 12 mm round No.1 German glass | 80 |

†Corning BioCoat 25 $cm^2$ flasks are 70 mL canted neck; Corning BioCoat 75 $cm^2$ flasks are 250 mL canted neck.




**Effect of Corning BioCoat PDL on Cortical Neurons.** (A) Mixed culture of cortical neurons and astrocytes cultured on Corning BioCoat PDL cultureware. Neurons are highly branched with very long processes. Astrocytes show similar process elongation. (B) Rat cerebellar granule (RCG) cells cultured on Corning BioCoat PDL cultureware show firm attachment (similar results obtained on PLL).

# Corning® BioCoat® Collagen IV Cultureware

Type IV Collagen is a ubiquitous component in basement membranes and provides the major structural support for this matrix. When the Collagen IV meshwork is assembled, it provides a scaffold for the assembly of other basement membrane components through interactions with laminin, entactin/nidogen, and heparan sulfate proteoglycan. Collagen IV is useful as a substrate for growth of epithelial, endothelial, muscle, and nerve cells. Collagen plays a role in the regulation of cell growth, differentiation and adhesion, as well as tissue formation.

## Applications include:

- Promotion of cell attachment and spreading
- Cell differentiation and neurite outgrowth
- Increased proliferation of PC12 cells
- Studies of effects of Collagen IV on cell behavior
- Cell adhesion assays

## Has been used to culture:

- PC12 cells[33-35]
- SH-SY5Y cells[33]
- Human melanoma cells lines SK-MEL-28-N1 and SK-MEL-28[36]
- Primary murine hepatocytes[37]

## Source

Engelbreth-Holm-Swarm (EHS) lathrytic mouse tumor

## Quality Control

- Tested for ability to initiate differentiation (neurite outgrowth) of NG-108 rat glioma/mouse neuroblastoma cells
- Tested and found negative for bacteria and fungi
- Collagen IV purity >90% by SDS-PAGE

## Storage

2°C to 8°C. Do not freeze.

## Ordering Information

### Multiwell and Assay Plates

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354428 | 6-well | 5 |
| 354430 | 24-well | 5 |
| 354429 | 96-well | 5 |

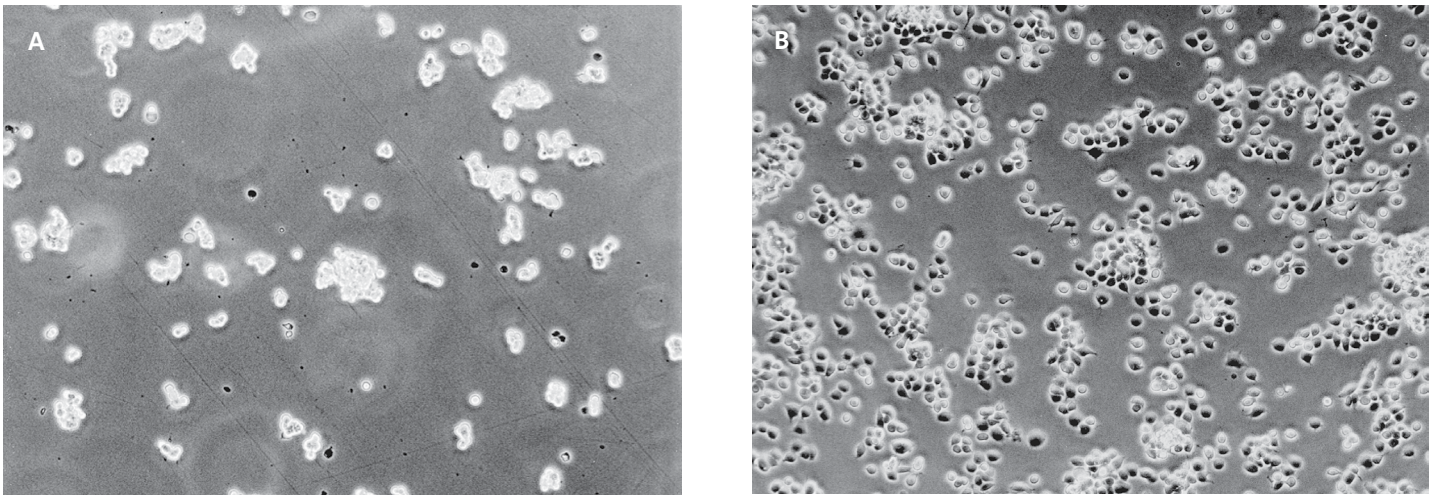
### Culture Dishes

| | | |
|---|---|---|
| 354416 | 60 mm | 20 |
| 354453 | 100 mm | 10 |

### Flasks

| | | |
|---|---|---|
| 354523 | 75 $cm^2$, plug-seal cap† | 10 |
| 354528 | 175 $cm^2$, plug-seal cap | 5 |

†Corning BioCoat 25 $cm^2$ flasks are 70 mL canted neck; Corning BioCoat 75 $cm^2$ flasks are 250 mL canted neck.




**Effects of Corning BioCoat Collagen IV Cultureware on PC12 Rat. Pheochromocytoma Cells.** (A) PC12 cells cultured on tissue culture plastic do not attach well and tend to float in clumps in the culture medium. (B) PC12 cells cultured on Corning BioCoat Collagen IV cultureware show 90% attachment and rapid proliferation.

# Corning® BioCoat® Fibronectin Cultureware

Human Fibronectin (HFN) is a widely distributed glycoprotein that is used as a substrate to promote attachment of cells through its central-binding domain RGD sequence. HFN is a product of most mesenchymal and epithelial cells and is present in both the ECM and plasma. The principal function of HFN appears to be in cellular migration during wound healing and development, regulation of cell growth and differentiation, and haemostasis/thrombosis.

## Applications include:

- Promotion of cell attachment and spreading
- Rapid expansion of cell populations
- Serum-free or reduced-serum culture
- Cell adhesion assays
- Studies of effects of HFN on cell behavior
- Improving survival of primary cells in culture

## Has been used to culture:

- 3T3 Preadipocytes[38]
- Transfected 293T and transfected H1299 cells[39]
- MCF-10A cells[40]
- Primary cord blood mononuclear cells[41]
- SK-MEL-28 (human melanoma cells)[42]
- NIH3T3 cells[43]
- MDA-231 human breast cancer cells[44]

## Source

Human plasma

**NOTE:** Source material tested for hepatitis B antigen and HIV-1 antibody

## Quality Control

- Tested for ability to promote attachment and spreading of BHK-21 hamster kidney cells
- Tested and found negative for bacteria and fungi
- Fibronectin purity >90% by SDS-PAGE

## Storage

2°C to 8°C. Do not freeze.

## Ordering Information

### Multiwell and Assay Plates

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354402 | 6-well | 5 |
| 354411 | 24-well | 5 |
| 354409 | 96-well | 5 |
| 4584 | 96-well half area black/clear glass bottom | 10 |
| 4585 | 384-well black/clear glass bottom | 10 |

### Culture Dishes

| | | |
|---|---|---|
| 354403 | 60 mm | 20 |
| 354451 | 100 mm | 10 |

### Flasks

| | | |
|---|---|---|
| 354532 | 25 $cm^2$, plug-seal cap† | 10 |
| 354521 | 75 $cm^2$, plug-seal cap† | 10 |
| 354526 | 175 $cm^2$, plug-seal cap | 5 |

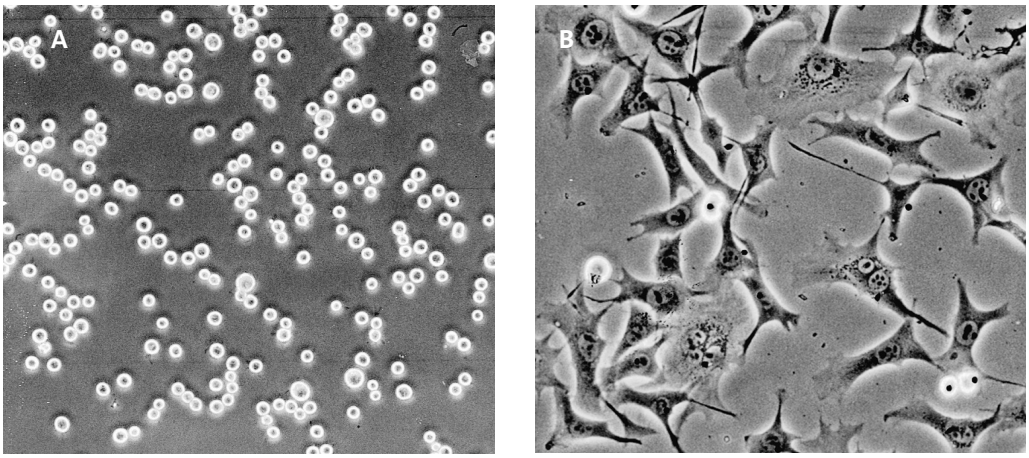
### Coverslips

| | | |
|---|---|---|
| 354088 | 22 mm round No. 1 German glass | 60 |

### CultureSlides

| | | |
|---|---|---|
| 354559 | 4-well | 12 |
| 354631 | 8-well | 12 |

†Corning BioCoat 25 $cm^2$ flasks are 70 mL canted neck; Corning BioCoat 75 $cm^2$ flasks are 250 mL canted neck.




**Effects of Corning BioCoat Fibronectin Cultureware on BHK-21 cells.** (A) BHK-21 fibroblasts cultured on glass cultureslides do not spread. (B) BHK-21 fibroblasts cultured on Corning BioCoat HFN cultureslides attach and spread within one hour.

# Corning® BioCoat® Laminin Cultureware

Laminin (LM), a major component of basement membranes, is a multifunctional glycoprotein that is used as a substrate to culture and maintain differentiated function of a wide variety of cells. Laminin has been shown in culture to stimulate neurite outgrowth, promote cell attachment, chemotaxis, cell differentiation, and neuronal survival.

## Applications include:

- Promotion of cell attachment and spreading
- Induction of cell differentiation and neurite outgrowth
- Increases proliferation of myoblasts[45]
- Studies of effects of laminin on cell behavior
- Cell adhesion assays

## Has been used to culture:

- SH-SY5Y (human neuroblastoma), Neuro-2A (mouse neuroblastoma), N1-E115 (rat neuroblastoma)[46]
- MCF-10A cells[47,48]
- SK-MEL-28 cells[49]
- HVSMC[50]
- MDA-231 breast cancer cell line[51]

## Source

Engelbreth-Holm-Swarm (EHS) mouse tumor

## Quality Control

- Tested for ability to initiate differentiation (neurite outgrowth) of NG-108 rat glioma/mouse neuroblastoma cells
- Tested and found negative for bacteria and fungi
- Laminin purity >90% by SDS-PAGE (contains entactin)

## Storage

2°C to 8°C. Do not freeze.

## Ordering Information

### Multiwell and Assay Plates

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354404 | 6-well | 5 |
| 354412 | 24-well | 5 |
| 354410 | 96-well | 5 |

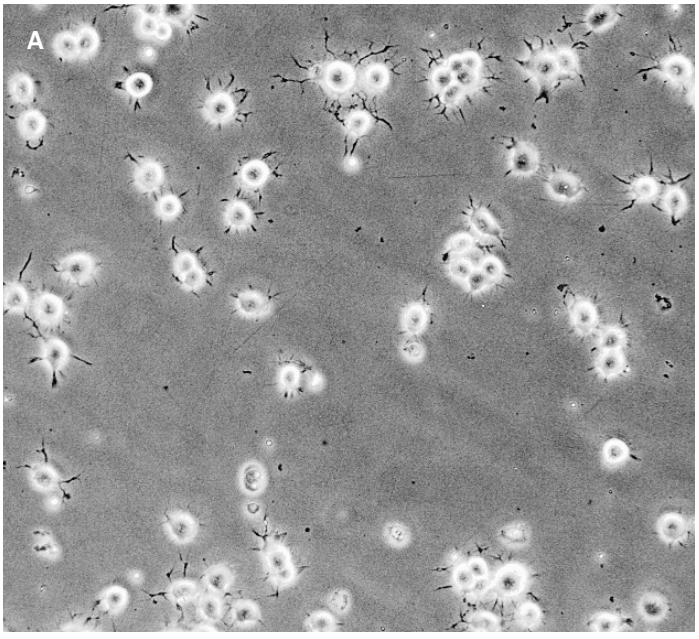
### Culture Dishes

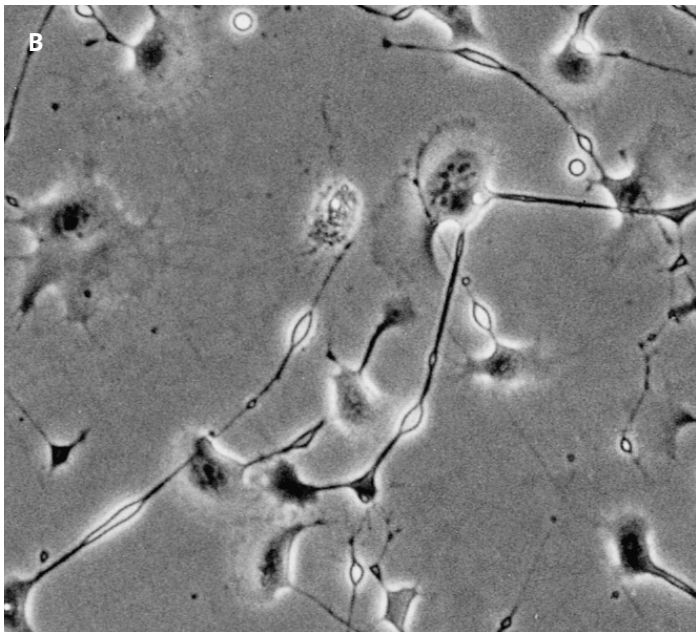
| | | |
|---|---|---|
| 354405 | 60 mm | 20 |
| 354452 | 100 mm | 10 |

### Flasks

| | | |
|---|---|---|
| 354522 | 75 $cm^2$, plug-seal cap† | 10 |

†Corning BioCoat 25 $cm^2$ flasks are 70 mL canted neck; Corning BioCoat 75 $cm^2$ flasks are 250 mL canted neck.




**Effects of Corning BioCoat LM cultureware on NG-108 rat glioma/mouse neuroblastoma cells.** (A) NG-108 rat glioma/mouse neuroblastoma cells cultured on tissue culture plastic are loosely adhered and remain rounded. (B) NG-108 rat glioma/mouse neuroblastoma cells cultured on Corning BioCoat LM cultureware exhibit a spindle-shaped morphology and dendritic processes.

# Corning® BioCoat® Matrigel® Matrix Cultureware

Corning Matrigel basement membrane matrix is a solubilized basement membrane preparation extracted from the Engelbreth-Holm-Swarm (EHS) mouse sarcoma, a tumor rich in ECM proteins. Its major component is laminin, followed by Collagen IV, heparan sulfate proteoglycans, entactin, and nidogen. As a thin or 2D coating, Corning Matrigel matrix is effective for the attachment and differentiation of both normal and transformed anchorage-dependent epithelial cells, it also supports the culture of human embryonic stem cells (hESC) as well as human induced pluripotent stem cells (iPSC) in a mouse embryonic fibroblast (MEF) feeder-independent environment. Additionally, it supports other cell types including neurons and oligodendrocytes. As a 3D coating, Corning Matrigel matrix supports the generation and culture of cancer spheroids and organoids to create more physiological relevant models in a high throughput format.

## Applications include:

- Elicitation of tissue-specific cellular morphology and protein production in epithelial cells
- Differentiation of endothelial, muscle, and neuronal cells
- Development of three-dimensional matrix model systems

## Has been used to culture:

- Rat hepatocytes[52]
- Primary human hepatocytes[53]
- Mouse pituitary gland tissue[54]

## Source

EHS mouse tumor

## Additional cell lines:

- Human-derived organoids[55]
- Embryonic and induced pluripotent stem cells[56-59]
- Cancer spheroids
- Progenitor cells[58]
- A wide variety of primary and other cell lines

## Formulation

- Dulbecco's Modified Eagle Medium with 50 µg/mL gentamycin. Corning Matrigel matrix is compatible with all culture media.

## Quality Control

- Tested for ability to promote neurite outgrowth from chick dorsal root ganglia in the absence of NGF
- Tested and found negative for bacteria and fungi

## Storage and Stability

- -20°C. Keep frozen until use.
- Thin layer cultureware stable at 2°C to 8°C.

## Ordering Information

### Corning BioCoat Matrigel Matrix Cultureware — Thin Layer

**Multiwell Plates**

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354607 | 96-well | 5 |

### Corning BioCoat Matrigel Matrix Cultureware for Embryonic Stem Cells

**Multiwell Plates**

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354671 | 6-well | 5 |

### Corning Matrigel Matrix-3D Plates

**Multiwell Plates**

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 356259 | 96-well black/clear | 1 |
| 356256 | 384-well black/clear | 1 |
| 356258 | 384-well white/clear | 1 |
| 356257 | 384-well white/clear | 5 |

# Corning® BioCoat® Poly-D-Lysine/Laminin, Poly-L-Orinthine/Laminin Cultureware

For some applications, the use of a combination of ECM proteins, such as Laminin (LM) attachment factors such as Poly-D-Lysine (PDL) or Poly-L-Orinthine (PLO) has been shown superior to the use of either alone.

Corning BioCoat PDL/LM and PLO/LM Cultureware is suitable for culturing many different types of Peripheral Nervous System (PNS) and Central Nervous System (CNS) networks and is useful for promoting neural cell attachment and differentiation.

## Applications include:

- Enhancement of neuronal cell attachment to plastic and glass
- Promotion of neurite outgrowth
- Culture of glial cells as a feeder layer for neurons
- Construction of neural cell model systems to study CNS function, development, and diseases

## Corning BioCoat PDL/LM has been used to culture:

- SH-SY5Y (human neuroblastoma), Neuro-2A (mouse neuroblastoma), N1-E115 (rat neuroblastoma)[60]
- Primary rat hippocampus[61]
- Murine T11-L3 dorsal root ganglion neurons (DRGNs)[62,63]
- Transfected PC12 cells[63]
- MCF-10A cells[64]
- Rat primary DRGNs[65]

## Source

- PDL, synthetic (MW 75-150 kD)
- PLO, synthetic (MW 30-70 kD)
- Laminin, EHS mouse tumor

## Quality Control

- PDL/LM and PLO/LM tested for ability to initiate differentiation (neurite outgrowth) of NG-108 rat glioma/mouse neuroblastoma cells
- Tested and found negative for bacteria and fungi

## Storage

2° to 8°C. Do not freeze.

## Ordering Information

### Corning BioCoat Poly-D-Lysine/Laminin Cultureware

#### Multiwell and Assay Plates

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354595 | 6-well | 5 |
| 354619 | 24-well | 5 |
| 354596 | 96-well | 5 |

#### Coverslips

| | | |
|---|---|---|
| 354087 | 12 mm round No.1 German glass | 80 |

#### CultureSlides

| | | |
|---|---|---|
| 354688 | 8-well | 12 |

### Corning BioCoat® Poly-L Ornithine/Laminin Cultureware

#### Multiwell and Assay Plates

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354658 | 6-well | 5 |
| 354659 | 24-well | 5 |
| 354657 | 96-well | 5 |

# Corning® BioCoat® T-Cell Activation Plates

Plate-bound antibodies against the T-cell receptor complex have been used to induce activation of T-cells from a variety of species without the help of accessory cells. Corning BioCoat T-Cell activation plates are precoated with high quality BD Pharmingen™ CD3 antibodies. Available for use with human T-cells, Corning BioCoat T-Cell activation plates offer lot-to-lot consistency and come individually packaged with lids for ease of use.

## Applications include:

- T-Cell activation
- Cytokine production
- Cytokine mRNA quantitation
- Co-stimulation
- Studies of drug effects on T-cell function

## Quality Control

- Tested for ability to proliferate human PBMCs
- Tested and found negative for bacteria and fungi

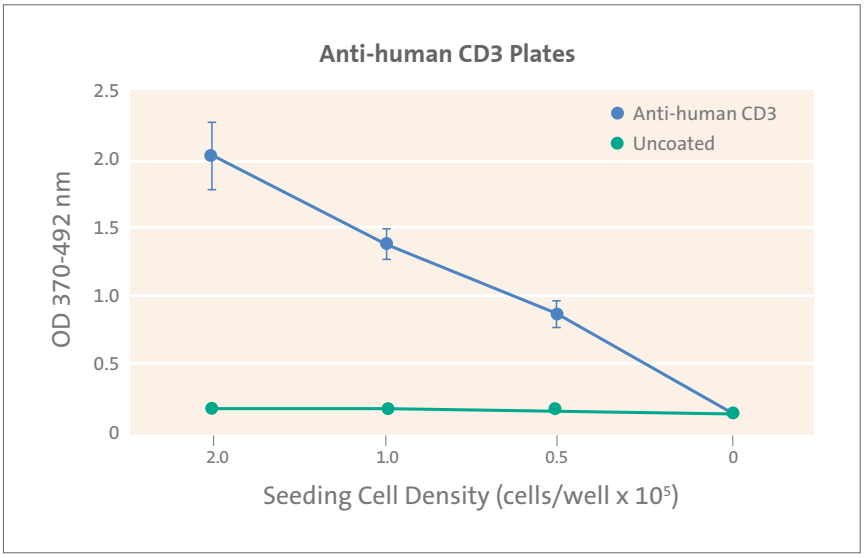
## Storage

2°C to 8°C. Do not freeze.

## Ordering Information

### Assay Plates

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354725 | Human Anti-CD3 96-well clear | 5 |
| 354730 | Uncoated Control | 5 |




48-hour incubation with human PBMCs followed by cell proliferation assay using BrdU (6-hour labeling).

# Corning® Pre-coated Permeable Supports

Permeable supports, also known as cell culture inserts, contain a microporous membrane that allows cells to be fed both apically and basolaterally, which mimics the *in vivo* cell environment. These culture systems have been found to support optimal cell differentiation and functionality *in vitro* and are used in a wide range of applications. Corning BioCoat® cell culture inserts are pre-coated with extracellular matrix (ECM) proteins to provide cells with an enriched growth environment, which further supports cell functionality for applications requiring a protein-coated cell surface, such as cell differentiation, migration and invasion assays.

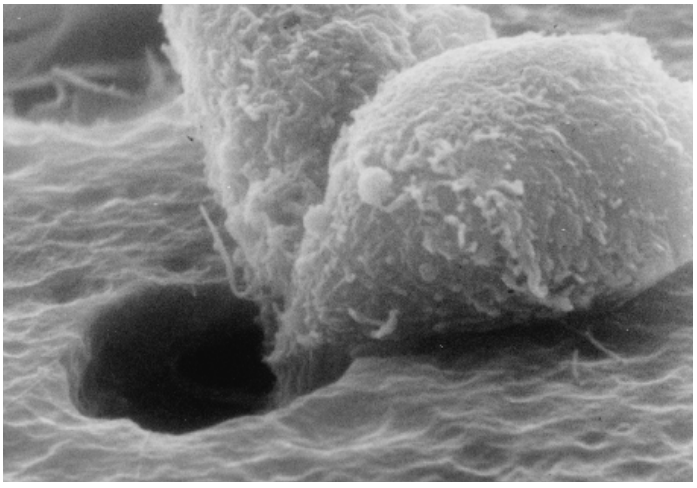
Various ECM coatings are available, including Corning Matrigel® matrix, Fibronectin, and Collagen. Coated inserts are also available with a variety of membrane types (including PET and Corning FluoroBlok™), pore sizes (0.4 to 8.0 µm), and device formats (individual and HTS). BioCoat insert systems are available in 24-well multiwell formats that have been optimized for specific assays, including angiogenesis, tumor cell invasion, Caco-2, and intestinal epithelium differentiation.

For example, cells grown on permeable supports coated with Fibrillar Collagen I can establish the barrier function of intestinal epithelial cell monolayers (Caco-2). In addition, inserts coated with Matrigel matrix are frequently cited for *in vitro* cell invasion assays that are often used in cancer research.

*See the Corning Permeable Supports Product Selection Guide (CLS-CC-027) for a full and up-to-date listing of our pre-coated cell culture insert products.*

## Application Areas

- Cell differentiation
- Co-culture
- Cell migration and invasion
- Angiogenesis
- Transport and permeability
- Toxicity testing



Scanning electron micrograph of two human fibrosarcoma cells (HT-1080 cells), having digested the Corning Matrigel matrix occluding the membrane and migrating through an 8.0 µm pore of the PET membrane.

## Ordering Information

### Corning BioCoat Collagen I Inserts, PET Membrane

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354540 | Inserts with 3.0 µm pore in four 6-well plates | 24 |
| 354444 | Inserts with 0.4 µm pore in two 24-well plates | 24 |
| 354541 | Inserts with 3.0 µm pore in two 24-well plates | 24 |

### Corning BioCoat Fibrillar Collagen Inserts, PET Membrane

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354474 | Inserts with 1.0 µm pore in two 24-well plates | 24 |

### Corning BioCoat FluoroBlok Fibronectin Inserts, PET Membrane

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354597 | Inserts with 3.0 µm pore in two 24-well plates | 24 |

### Corning BioCoat Matrigel Invasion Chambers, PET Membrane

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354481 | Invasion chambers with 8.0 µm pore in four 6-well plates | 24 |
| 354480 | Invasion chambers with 8.0 µm pore in two 24-well plates | 24 |

### Corning BioCoat Intestinal Epithelium Differentiation Environment

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 355057 | Intestinal epithelium differentiation environment, kit | 1 Kit |

### Corning BioCoat Control Inserts, PET Membrane

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354572 | Control inserts with 0.4 µm pore in two 24-well plate | 24 |
| 354578 | Control inserts with 8.0 µm pore in two 24-well plates | 24 |

### Corning BioCoat HTS Caco-2 Assay System, PET Membrane

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354802 | 24-Multiwell insert system with 1.0 µm pore | 5 |

### Corning BioCoat Fibrillar Collagen I 24-Multiwell Insert System, PET Membrane

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 354803 | 24-Multiwell insert system with 1.0 µm pore | 1 |

### Corning BioCoat Pre-coated PAMPA Plate System

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 353015 | PAMPA plate system, with lid | 5 |

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