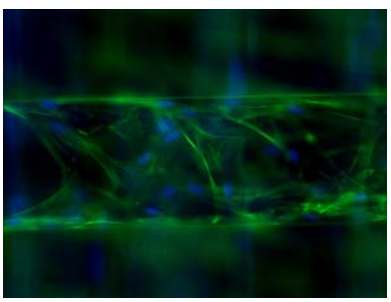
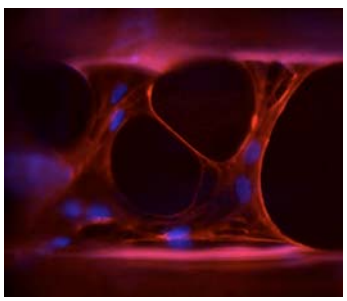
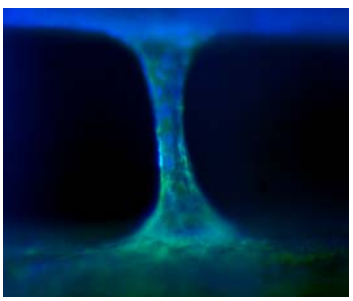
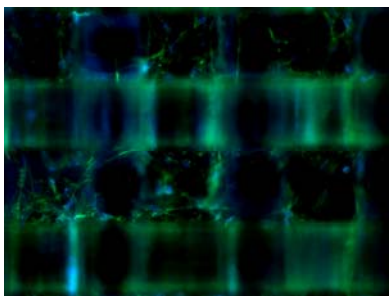
See the Difference
3D Can Make!

3D Biotek

Biological Research in 3-Dimension

See the Difference in 3D!

Product Catalog
2010

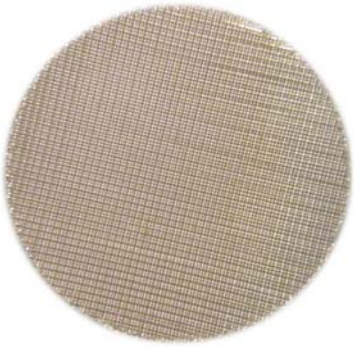





3D Insert™-PCL

Polycaprolactone (PCL) is a biodegradable polyester material that has been used in many FDA approved implants, drug delivery devices, sutures, adhesion barriers, and is now available in 3D Biotek's revolutionary 3D Insert™! PCL has also been widely used in the fabrication of porous 3D scaffolds for tissue engineering research.

3D Insert™-PS

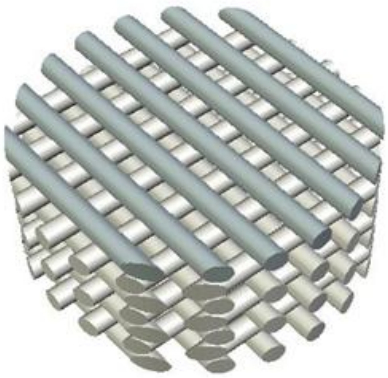
This is the ideal product for your low-cost, high-quality 3D cell culture applications!



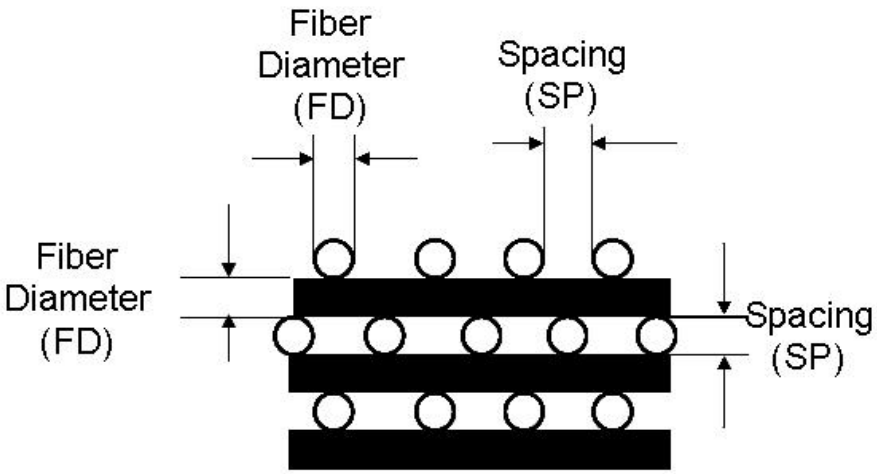
3D Insert™-PS is made from polystyrene, the same material as that of traditional tissue culture plates. The combination of transparency of the material and the porous structure design of 3D Insert™-PS allows researchers to monitor the cell growth under an inverted light microscope without the need of using sophisticated equipment.

The same tissue culture polystyrene (TCP) is now available in 3D!

Structural Parameters of the 3D Insert™



3D Insert™ Structure



3D Insert™ Structure Parameters

Just Some of the Benefits of Our 3D Insert™

1. 100% Connectivity

The pores of the products are 100% open and interconnected, making it easy for cells to be seeded throughout the porous scaffolds and the nutrient and cell metabolism waste to be exchanged.

2. Well Defined Pore Size and Porous Structure

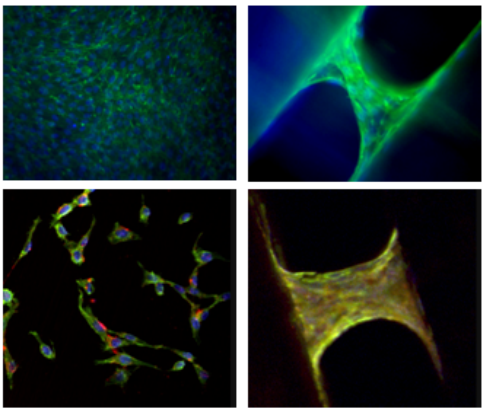
3D Biotek's precision 3D micro-fabrication technology produces a well-defined fiber/pore size and ensures the reproducibility of the porous structure from batch to batch.

3. Organic Solvent Free

Cytotoxic organic solvents, such as chloroform and methylene chloride, are often used in fabricating PCL scaffolds. 3D Biotek's precision 3D micro-fabrication technology is a solvent-free manufacturing process. Therefore, the PCL 3D Insert™ is free of organic solvent.

Easy Imaging

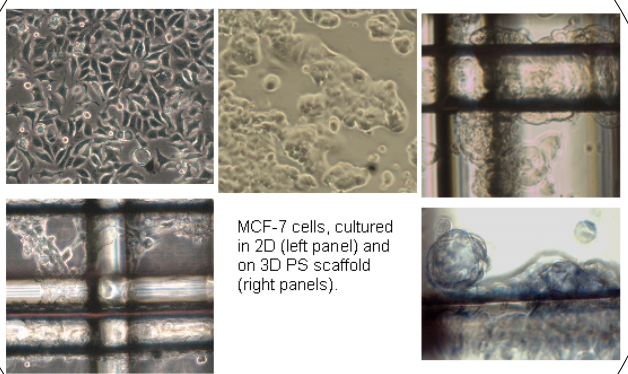
Cells cultured on 3D Insert™-PS have enhanced cellular organization



Fluorescent (top panels) and Confocal (bottom panels) images of NIH-3T3 cells cultured in 2D (left panels) and on 3D PS scaffolds (right panels). F-actin filaments (green), Fibronectin (red), DAPI (blue).

Tumor Cells

Cells can form 3D structures within 3D Insert™-PS, while 2D cells grow in a monolayer.

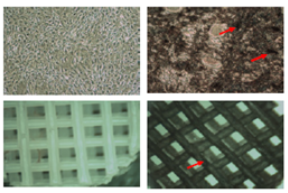


MCF-7 cells, cultured in 2D (left panel) and on 3D PS scaffold (right panels).

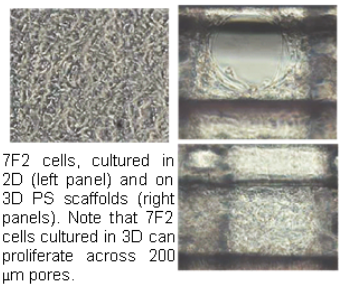
ECC1 cells, cultured in 2D (top panel) & on 3D PS scaffold (bottom panel).

Tissue Engineering and Stem Cells

3D Insert™-PCL and 3D Insert™-PS support stem cell proliferation and differentiation

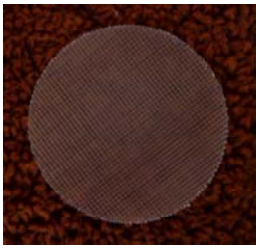


Von Kossa staining (days 7 and 28) of human mesenchymal stem cells cultured in 2D (top panels) and on 3D PCL scaffolds (bottom panels). Red arrows show positive staining for mineralized nodule formation.



7F2 cells, cultured in 2D (left panel) and on 3D PS scaffolds (right panels). Note that 7F2 cells cultured in 3D can proliferate across 200 µm pores.

Features and Benefits of the 3D Insert™-PS



Ideal for daily 3-dimensional cell culture applications. By simply using one of our 3D Insert™–PS ready-to-use kits, you can turn an ordinary 2D monolayer cell culture into a novel 3D cell culture environment, which offers many extraordinary benefits you may never have realized before.

Pre-Sterilized and Ready-to-Use
3D Insert™-PS scaffolds are prepackaged into wells of tissue culture plates, terminally sterilized using γ-radiation, and are ready to use for your convenience. Currently, our PS scaffolds are available in prepackaged tissue culture plates ranging from 6-well to 96-well plates.

100% Connectivity
3D Biotek's precision microfabrication technology produces a well-defined fiber/pore size and ensures the reproducibility of the porous structure from batch to batch. The pores of the inserts are 100% open, making it easy for cells to be seeded throughout the porous scaffolds and for an efficient exchange of nutrient and cellular metabolic waste. This feature makes the products especially useful in conducting dynamic cultures where the medium can perfuse through the open porous structure.

Easy Imaging and Cell Growth Monitoring
3D Insert™-PS scaffolds are made from polystyrene, the same material as the traditional tissue culture plates. The combination of transparency of the material and the porous structure design makes it possible to monitor cell growth under an inverted light microscope.

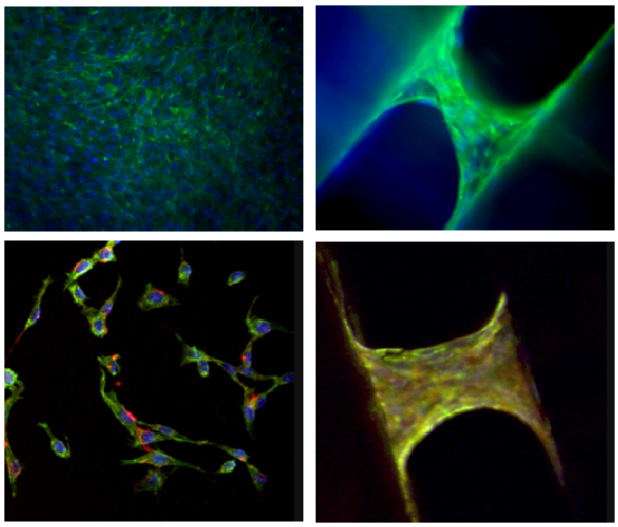
Mechanically Strong and Easy to Handle
3D Insert™-PS scaffolds are mechanically strong and therefore very easy to handle.

Free of Animal-Derived Material
Scaffolds are made from 100% synthetic polymer with consistent quality to ensure experimental reproducibility from batch to batch.

Improved Cell Culture Efficiency
3D Biotek's scaffolds have increased surface area as compared to 2D cell culture plates. As a result, more cells can be cultured on our 3D Inserts than on the same-sized cell culture dish/plate/flask/bioreactor.

Easy Separation of Cytokines and Growth Factors Secreted by Cultured Cells
Our 3D cell culture PS scaffolds will not absorb cytokines and growth factors. Therefore, secreted cytokines and growth factors can be easily separated or recovered from culture medium without extensive separation steps.

Cells Cultured on 3D Insert™-PS



Have Enhanced Cellular Organization

Fluorescen: (top panels) and Confocal (bottom panels) images of NIH-3T3 cells cultured in 2D (left panels) and on 3D PS scaffolds (right panels). F-actin filaments (green), Fibronectin (red), DAPI (blue).

3D Insert™-PS

PS Catalog Numbers

Catalog Number	Fiber Diameter (µ)	Pore Size (µ)	Size	PS Inserts in Package
PS152006-3	150	200	6-well	3
PS152012-6	150	200	12-well	6
PS152024-12	150	200	24-well	12
PS152048-16	150	200	48-well	16
PS152096-24	150	200	96-well	24
PS252012-6	250	200	12-well	6
PS304006-3	300	400	6-well	3
PS304012-6	300	400	12-well	6
PS304024-12	300	400	24-well	12
PS304048-16	300	400	48-well	16
PS304096-24	300	400	96-well	24

Nominal Cell Growth Area

2D	3D Insert™-PS	
6 well		
9.6 cm²	1520	54.5 cm²
	3040	54.2 cm²
12 well		
4 cm²	1520	30.2 cm²
	3040	16.4 cm²
24 well		
1.9 cm²	1520	11.0 cm²
	3040	9.2 cm²
48 well		
1 cm²	1520	5.5 cm²
	3040	4.0 cm²
96 well		
0.32 cm²	1520	1.5 cm²
	3040	1.1 cm²

Storage: Opened plates containing scaffolds can be stored at room temperature in sterile conditions.

Seeding Protocol (available on www.3dbiotek.com/3dprotocols.aspx)**:**

1. Unpack scaffolds in tissue culture hood

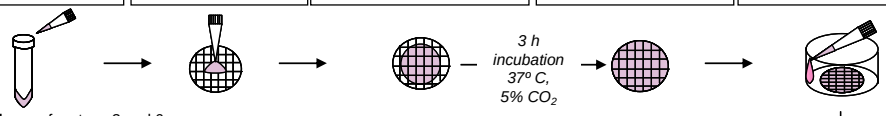
2. Resuspend cells + media in a total volume of ~ 1 ml

3. Pipette suspension droplet onto center of scaffold surface

4. Immediately after seeding, cell droplet will cover ~80-90% of scaffold

5. Cell droplet penetrates scaffold's entire volume

6. Gently add remaining media along the well's edge



Seeding and **Resuspension Volumes** for steps 3 and 6

3.

Scaffold	Seeding Volume
96-well	20 µl
48-well	50 µl
24-well	100 µl
12-well	200 µl
6-well	500 µl

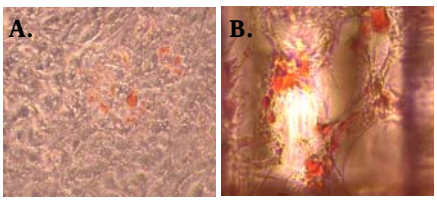
6.

Scaffold	Volume To Add After 3 h	Total Volume After 3 h
96-well	180 µl	200 µl
48-well	200 µl	250 µl
24-well	400 µl	500 µl
12-well	1300 µl	1500 µl
6-well	1500 µl	2000 µl

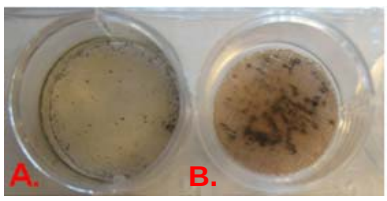
7. Perform experiments
- Monitor cell growth and morphology in real time with an inverted light microscope
- Any assay can be easily performed with our scaffolds with little to no modification!

Related Products

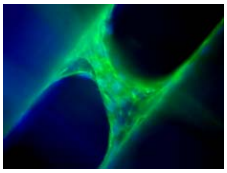
Related Products	Size	Catalog Number
Untreated tissue culture plates	6-well	TCP001006
	12-well	TCP001012
	24-well	TCP001024
	48-well	TCP001048
	96-well	TCP001096
Treated tissue culture plates **not to be used for 3D cell culture*	6-well	TCP011006
	12-well	TCP011012
	24-well	TCP011024
	48-well	TCP011048
	96-well	TCP011096



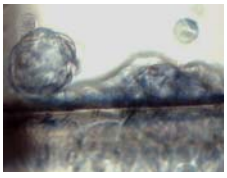
Following adipogenic induction, differentiating 2D (A) and 3D (B) hMSCs were assayed with Oil-Red-O. hMSCs on 3D Inerst™-PS scaffolds showed larger and increased numbers of lipid droplets (100x).



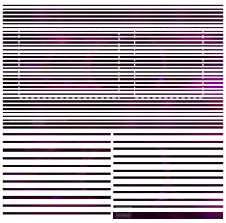
Following osteoblastic induction, 2D (A) and 3D (B) cells were stained by Von Kossa assay at days 14. Osteoblastic cells on 3D Insert™-PS scaffolds showed more mineralized nodule formation in 3D.



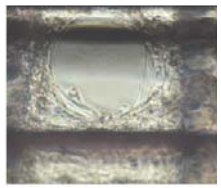
NIH-3T3 cells organize into 3D structures between PS fibers (F-actin: green, DAPI: blue).



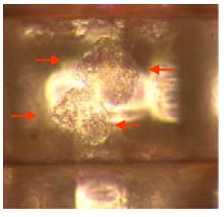
MCF-7 cells form aggregates and rounded cell structures on PS fibers and within pores (200x)



hMSCs deposit fibronectin matrix on PS fibers and naturally fill PS scaffold pores (Fibronectin: red, DAPI: blue).

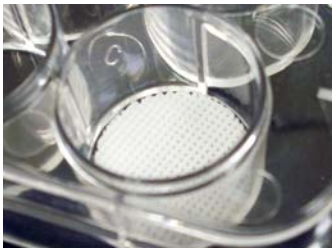


Osteoblastic cells form cell sheets to cover PS scaffold fibers and pores (100x).



HepG2 cells form 3D aggregates within PS scaffold pores (100x).

Features and Benefits of the 3D Insert™-PCL



Polycaprolactone (PCL) is a biodegradable polymer used in many FDA approved implants, drug delivery devices, sutures, as well as for a wide variety of applications in tissue engineering research.

Well-Known Scaffold Biomaterial for Tissue Engineering Research
PCL has been widely used in the following tissue engineering applications:

Bone/Cartilage	Cardiovascular	Nerve
Tendon/Ligament	Liver	Skin

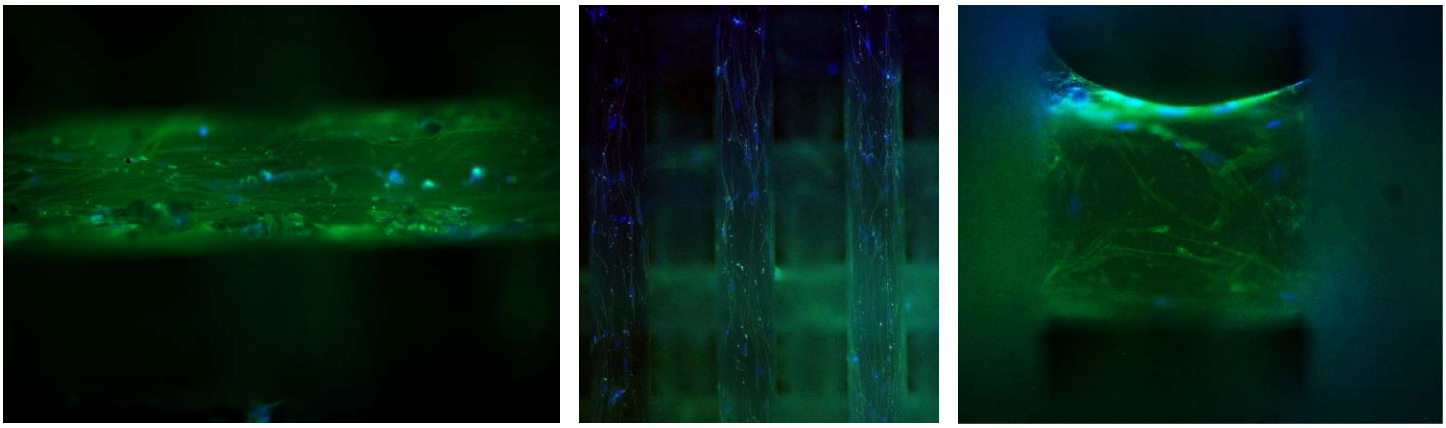
100% Connectivity
The pores of the 3D Inserts™ are 100% open, making it easy for cells to be seeded throughout the porous scaffolds and for efficient nutrient/waste exchange. Furthermore, this feature makes the products especially suitable for conducting dynamic cultures where the medium can perfuse through the open porous structure.

Well-Defined Pore Size and Porous Structure
3D Biotek's 3D precision micro-fabrication technology produces a well-defined fiber/pore size and ensures the reproducibility of the porous structure from batch to batch.

Organic Solvent Free
Cytotoxic organic solvents, such as chloroform and methylene chloride, are often used in fabricating PCL scaffolds. 3D Biotek's 3D precision micro-fabrication technology is a solvent-free manufacturing process, producing a 3D Insert™- PCL free of organic solvent.

Improved Cell Culture Efficiency
3D Biotek's scaffolds have increased surface areas as compared to 2D cell culture plates. As a result, more cells can be cultured on our 3D Insert™ than on the same-sized culture dish/plate/flask/bioreactor.

Fit Into Any Bioreactor
The size and configurations of the 3D Insert™- PCL can be customized to fit into the bioreactor of your choice.



Human fibroblasts proliferating on polycaprolactone (PCL) scaffolds. F-actin (green), DAPI (blue).

Depending on your research needs, **3D Insert™—PCL** can be made in many combinations of fiber diameters and spacings. Our technical support team will work with you and customize the scaffolds to meet the specific needs of your research project. For more information, please visit our website at **www.3DBiotek.com.**

3D Insert™-PCL

PCL Catalog Numbers

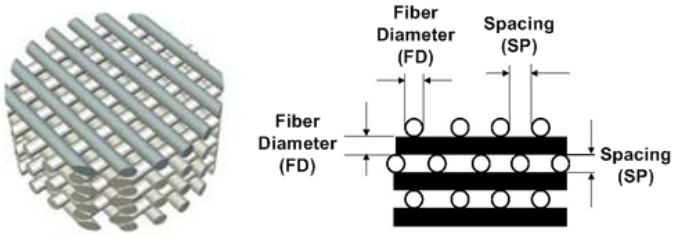
Catalog Number	Fiber Diameter (µ)	Pore Size (µ)	Size	PS Inserts in Package
PCL303006-3	300	300	6-well	3
PCL303012-6	300	300	12-well	6
PCL303024-12	300	300	24-well	12
PCL303048-16	300	300	48-well	16
PCL303096-24	300	300	96-well	24
PCL305006-3	300	500	6-well	3
PCL305012-6	300	500	12-well	6
PCL305024-12	300	500	24-well	12
PCL305048-16	300	500	48-well	16
PCL305096-24	300	500	96-well	24

Storage: Opened plates containing scaffolds can be stored at room temperature in sterile conditions.

Nominal Cell Growth Area

2D	3D Insert™-PCL	
6 well		
9.6 cm^2	3030	87.2 cm^2
	3050	63.0 cm^2
12 well		
4 cm^2	3030	33.3 cm^2
	3050	23.4 cm^2
24 well		
1.9 cm^2	3030	16.4 cm^2
	3050	11.4 cm^2
48 well		
1 cm^2	3030	13.6 cm^2
	3050	5.3 cm^2
96 well		
0.32 cm^2	3030	3.3 cm^2
	3050	1.5cm^2

3D Insert™-PCL Structural Parameters



Seeding Protocol (available on www.3dbiotek.com/3dprotocols.aspx)**:**

1. Unpack scaffolds in tissue culture hood

2. Resuspend cells + media in a total volume of ~ 1 ml

3. Pipette suspension droplet onto center of scaffold surface

4. Immediately after seeding, cell droplet will cover ~80-90% of scaffold

3 h incubation 37° C, 5% CO_2

5. Cell droplet penetrates scaffold's entire volume

6. Gently add remaining media along the well's edge

Seeding and **Resuspension Volumes** for steps 3 and 6

3.

Scaffold	Seeding Volume
96-well	20 µl
48-well	50 µl
24-well	100 µl
12-well	200 µl
6-well	500 µl

6.

Scaffold	Volume To Add After 3 h	Total Volume After 3 h
96-well	180 µl	200 µl
48-well	200 µl	250 µl
24-well	400 µl	500 µl
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7. Perform experiments
- Monitor cell growth and morphology in real time with an inverted light microscope
- Any assay can be easily performed with our scaffolds with little to no modification!

Related Products

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	24-well	TCP001024
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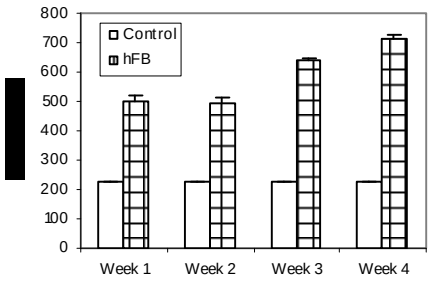
	96-well	TCP001096
Treated tissue culture plates **not to be used for 3D cell culture*	6-well	TCP011006
	12-well	TCP011012
	24-well	TCP011024
	48-well	TCP011048
	96-well	TCP011096

Human fibroblasts cultured on 3D Insert™-PCL scaffolds show a continuous increase in proliferation.



Cell Lines Cultured on 3D Insert™-PS	
Tumor cells	♦ MCF-7 ♦ MCF-7:WS8 ♦ ECC1 ♦ HepG2
Stem Cells	♦ Human Mesenchymal Stem Cells (hMSCs) ♦ Mouse bone marrow stromal stem cells (mBMSSCs)
Hepatocytes	♦ Huh-7 ♦ HepG2
Osteoblasts	♦ 7F2 ♦ hMSC-derived osteoblasts
Chondrocytes	♦ hMSC-derived chondrocytes
Adipocytes	♦ hMSC-derived adipocytes
Neural cells	♦ SH5Y ♦ U87
Cardiomyocytes	♦ H9c2 ♦ Rat primary cardiomyocytes
Keratinocytes	♦ Human keratinocytes, neonatal (HEKn)
Epithelial cells	♦ MCF-10A ♦ HEK293T
Fibroblasts	♦ Human fibroblasts, adult ♦ NIH-3T3 ♦ L929

As our customer's research grows, so does this list! 3D Insert™ scaffolds are compatible with any type of cell, but if you should have any remaining questions about the compatibility of our scaffolds with your cells, please contact 3D Biotek at info@3DBiotek.com.

Cell Lines Cultured on 3D Insert™-PCL	
Stem Cells	♦ Human Mesenchymal Stem Cells (hMSCs)
Hepatocytes	♦ Huh-7 ♦ HepG2
Osteoblasts	♦ 7F2 ♦ hMSC-derived osteoblasts
Chondrocytes	♦ hMSC-derived chondrocytes
Adipocytes	♦ hMSC-derived adipocytes
Fibroblasts	♦ Human fibroblasts, adult ♦ NIH-3T3 ♦ L929

Properties of the 3D Insert™ Series

Nominal Cell Growth Area				
2D	**3D Insert™-PS**		**3D Insert™-PCL**	
6 well	6 well		6 well	
9.6 cm²	*1520*	54.5 cm²	*3030*	87.2 cm²
	3040	54.2 cm²	*3050*	63.0 cm²
12 well	12 well		12 well	
4 cm²	*1520*	30.2 cm²	*3030*	33.3 cm²
	3040	16.4 cm²	*3050*	23.4 cm²
24 well	24 well		24 well	
1.9 cm²	*1520*	11.0 cm²	*3030*	16.4 cm²
	3040	9.2 cm²	*3050*	11.4 cm²
48 well	48 well		48 well	
1 cm²	*1520*	5.5 cm²	*3030*	13.6 cm²
	3040	4.0 cm²	*3050*	5.3 cm²
96 well	96 well		96 well	
0.32 cm²	*1520*	1.5 cm²	*3030*	3.3 cm²
	3040	1.1 cm²	*3050*	1.5 cm²

PS and PCL 3D Insert™ **Average Diameter (cm²)**	
6 well	33.6
12 well	20.7
24 well	14.4
48 well	9.0
96 well	5.2

3D Insert™ Average Thickness (mm)			
PS		***PCL***	
1520	0.6	*3030*	1.6
3040	1.2	*3050*	1.6

Comparison of 3D Cell Culture Scaffolds/Matrix								
	Brand Name	Ready to use	100% interconnected pores	High surface to volume ratio	Variable configurations (customizable)	Easy cell recovery	Plate reader compatible	Transparency (direct observation with light microscope)
3D Biotek	3D Insert-PS	★	★	★	★	★	★	★
	3D Insert-PCL	★	★	★	★	★	☆	☆
Others	Gel Matrices	☆	☆	☆	☆	☆	☆	★
	PLA foam	☆/★	☆	★	☆	☆	☆	☆
	CaP foam	★	☆	★	☆	☆	☆	☆
	Alginate Foam	★	☆	★	☆	☆	☆	☆

★ *Compatible*
☆ *Not Compatible*

See the Difference in 3D!

3D Biotek's scaffolds have the broadest applications

Commonly used assays that are compatible with 3D Biotek's cell culture scaffolds	
Cell lifting and tissue digestion (Trypsin, Trypsin-EDTA, Collagenase)	👍
RNA Isolation (Tri-Reagent)	👍
Protein Assays	👍
Proliferation Assays (DNA Assay [fluorescent detection], Alamar Blue, MTT, Neutral Red)	👍
Cell Transfections (Transient, Stable [baculovirus])	👍
Differentiation Assays (ALP Activity, *In Situ* Collagen Content, GAG Characterization)	👍
Characterization Stains (Von Kossa, Oil-Red-O, Alcian Blue, Sirius Red, Albumin)	👍
Immunofluorescence and Immunohistochemistry *compatible with inverted light and fluorescent microscopes	👍
Viability and Toxicity Assays (Multiplexing Assays, ADME/Tox Assays) *compatible with microplate readers	👍

Why Should Your Next Culture Be In 3D?

Stem Cell Culture	2D Cell Culture	3D Cell Culture
Total Cells / Well	12,000	90,000
Plate Cost Per Week	$16.77	$198.00*
Weekly Cell Culture Expense (Media, Consumables, And Labor Cost)	$406.00	$65.50
Total Weekly Stem Cell Culture Cost	$ 422.77	**$263.50**

* Plate cost reflects two *3D Insert™* PS152012-6 sterile plates rate.

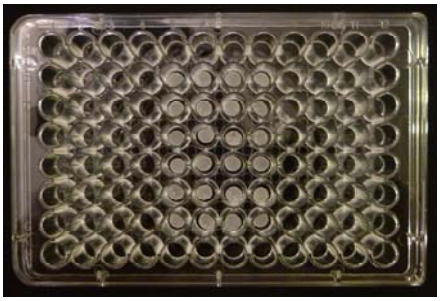
38% Savings!

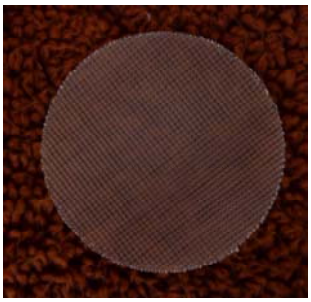
- Switching to the 3D Insert™ will ***increase the value and benefits*** of your research.
- 3D Insert™ scaffolds provide 3D culture space. On average, they can grow **750% MORE** cells than traditional 12-well, 2D cell culture plates.
- Upgrading to the 3D Insert™ scaffolds may help you ***lower your overall cell culture cost.***

Imagine the Possibilities with

3D Insert™-PS Series

Sterile 3D cell culture plates with non-degradable polymer (Polystyrene) . This is the ideal product for your daily low-cost high-quality 3D cell culture applications.

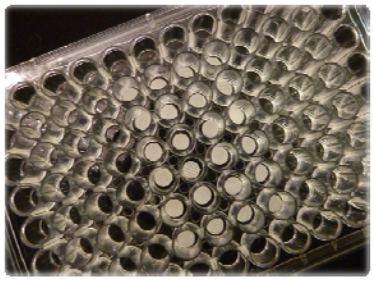




Item Number	Description	Price
PS152006-3	• 6-well sterile plate with **3** 3D scaffolds • Fiber Diameter: ~150 microns • Spacing: ~200 microns	$99
PS304006-3	• 6-well sterile plate with **3** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~400 microns	$99
PS152012-6	• 12-well sterile plate with **6** 3D scaffolds • Fiber Diameter: ~150 microns • Spacing: ~200 microns	$99
PS304012-6	• 12-well sterile plate with **6** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~400 microns	$99
PS152024-12	• 24-well sterile plate with **12** 3D scaffolds • Fiber Diameter: ~150 microns • Spacing: ~200 microns	$99
PS304024-12	• 24-well sterile plate with **12** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~400 microns	$99
PS152048-16	• 48-well sterile plate with **16** 3D scaffolds • Fiber Diameter: ~150 microns • Spacing: ~200 microns	$99
PS304048-16	• 48-well sterile plate with **16** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~400 microns	$99
PS152096-24	• 96-well sterile plate with **24** 3D scaffolds • Fiber Diameter: ~150 microns • Spacing: ~200 microns	$99
PS304096-24	• 96-well sterile plate with **24** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~400 microns	$99

3D Insert™-PCL Series

Sterile 3D cell culture plates with **Biodegradable** polymer (Polycaprolactone). This is the ideal product for stem cell tissue engineering studies.



Item Number	Description	Price
PCL303006-3	• 6-well sterile plate with **3** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~300 microns	$199
PCL305006-3	• 6-well sterile plate with **3** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~500 microns	$199
PCL303012-6	• 12-well sterile plate with **6** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~300 microns	$199
PCL305012-6	• 12-well sterile plate with **6** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~500 microns	$199
PCL303024-12	• 24-well sterile plate with **12** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~300 microns	$199
PCL305024-12	• 24-well sterile plate with **12** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~500 microns	$199
PCL303048-16	• 48-well sterile plate with **16** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~300 microns	$199
PCL305048-16	• 48-well sterile plate with **16** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~500 microns	$199
PCL303096-24	• 96-well sterile plate with **24** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~300 microns	$199
PCL305096-24	• 96-well sterile plate with **24** 3D scaffolds • Fiber Diameter: ~300 microns • Spacing: ~500 microns	$199

3D Cell Transfection Kit

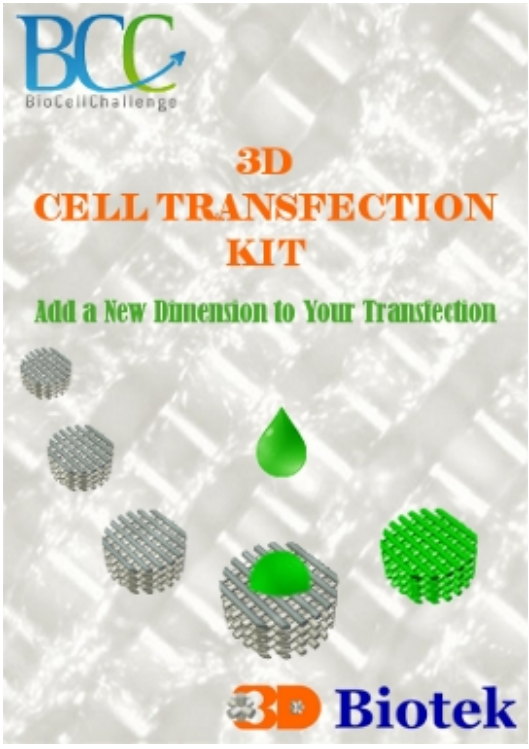
Add a New Dimension to Your Transfection

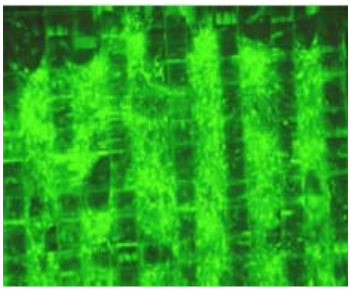
The 3D Cell Transfection Kit is based on a unique *in vitro* transfection technology which allows researchers to achieve high delivery efficiencies of plasmid DNA into 3D cultured cells. This innovative product includes a sterile plate containing 3D Cell Culture Scaffolds (3D Biotek, LLC) and an especially designed 3D Transfection Reagent (BioCellChallenge, SAS). With this kit, researchers can now perform extended 3D transgene expression studies in cells grown in physiological-like tissue environments.

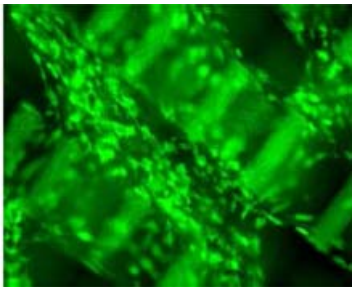
3D Cell Culture Scaffolds are made from polystyrene, the same material as traditional tissue culture plates. The combination of polystyrene's transparency and the porous structural design of 3D Cell Culture Scaffolds allows researchers to monitor cell growth and transfection efficiency under an inverted light microscope.

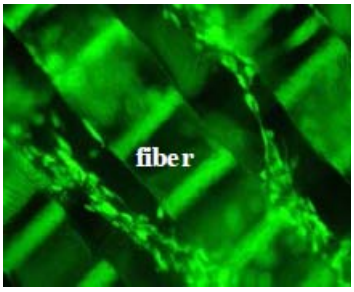
3D Cell Culture Scaffolds within the 3D Cell Transfection Kit have increased surface areas compared with 2D cell culture plates. As a result, more cells can be transfected on 3D Cell Culture Scaffolds while using the same size cell culture plates.

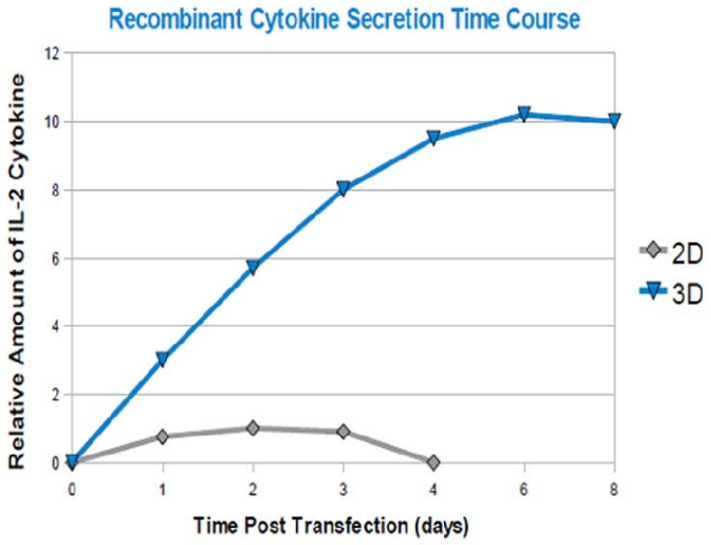
3D Cell Culture Scaffolds will not absorb cytokines, growth factors, or any other molecules. Therefore, molecules secreted by the transfected cells can easily be separated or recovered from culture medium without extensive separation steps.











Greater and extended IL-2 cytokine secretion in 3D. HEK293T were seeded and transfected in 2D ($10x10^3$ cells, 0.25 g IL-2 cytokine plasmid, 0.5 uL commercial transfection reagent) and 3D ($200x10^3$ cells, 0.5 ug IL-2 cytokine plasmid, 3 uL 3D)

3D Cell Transfection Kit

3D Biotek

BioCellChallenge

The Many Advantages of the 3D Cell Transfection Kit over 2D Transfection

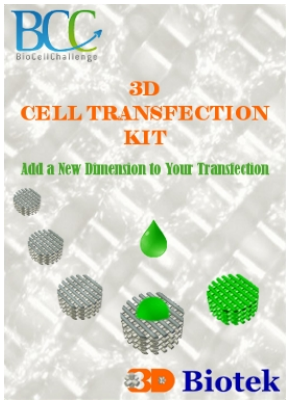
In vivo-like cell culture environment
Higher transfection efficiency
Increased protein production
Longer transgene expression
Easy separation of proteins secreted by 3D transfected cells
Suitable for primary & stem cell culture and/or transfection
Compatible with an inverted light microscope
One step « Transfect & Seed » protocol
Easy to handle scaffolds
Non-toxic

The 3D Cell Transfection Kit is based on a unique *in vitro* transfection technology which allows researchers to achieve high delivery efficiencies of plasmid DNA into 3D cultured cells. This innovative product includes a sterile plate containing 3D Cell Culture Scaffolds and 3D Transfection Reagent. With this kit, researchers can now perform extended 3D transgene expression studies in cells grown in physiological-like tissue environments.

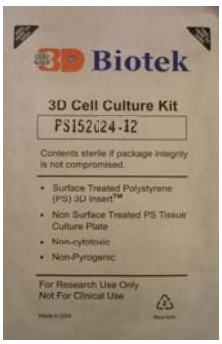
3D Cell Culture Scaffolds are made from polystyrene, the same material as traditional tissue culture plates. The combination of polystyrene's transparency and the porous structural design of 3D Cell Culture Scaffolds allows researchers to monitor cell growth and transfection efficiency under an inverted light microscope, or with fluorescence microscopy, respectively, without sophisticated equipment.

3D Cell Culture Scaffolds within the 3D Cell Transfection Kit have increased surface areas compared with 2D cell culture plates. As a result, more cells can be transfected on 3D Cell Culture Scaffolds while using the same size cell culture plates. 3D Cell Culture Scaffolds will not absorb cytokines, growth factors, or any other molecules. Therefore, molecules secreted by the transfected cells can easily be separated or recovered from culture medium without extensive separation steps.

3D Cell Transfection Kit Series



Sterile 3D cell culture plates with non-degradable polymer (Polysterene) scaffolds and 3D Transfection Reagent.



3D-DNA24

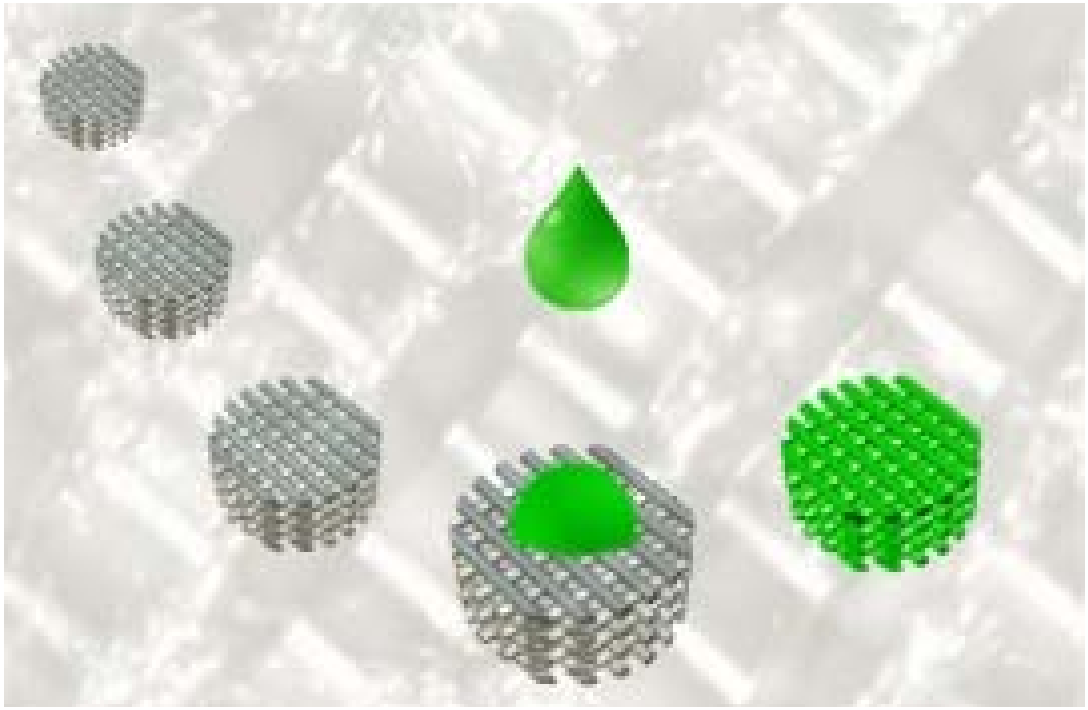
- 24-well sterile plate with **12** 3D scaffolds
- Fiber Size: ~150 µm, Pore Size: ~200 µm
- 200 µL of 3D Transfection Reagent

List price: $199/ kit

3D-DNA96

- 96-well sterile plate with **24** 3D scaffolds
- Fiber Size: ~150 µm, Pore Size: ~200 µm
- 100 µL of 3D Transfection Reagent

List price: $199/ kit



Contract Lab Services

Let 3D Biotek Help You Achieve Your Goals!

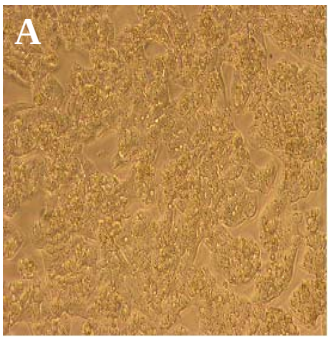
It is well known that 2D *in vitro* cell culture systems do not accurately represent *in vivo* environments. For example, *in vivo* cancer cells are much more resistant to anti-cancer therapeutic reagents than those cultured in 2D. Therefore, to speed up your drug discovery process and to improve your screening efficiency and success rate, you need an appropriate 3D *in vitro* model system. Now 3D Biotek can help!

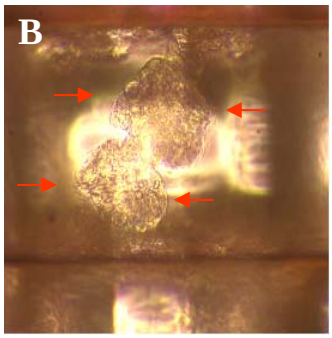
3D Biotek offers unique **3D Insert™ scaffolds** that can be used to create superior *in vitro* 3D models for your drug discovery research. In addition, for your convenience, we provide **contract lab services** to suit many of your research needs.

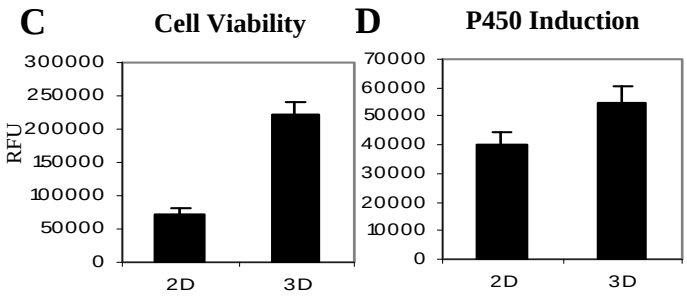
See the Difference 3D Can Make!

Human cells are easily cultured on 3D Insert™ scaffolds. For an up-to-date list of cells cultured on our scaffolds, please go to our website at www.3dbiotek.com.

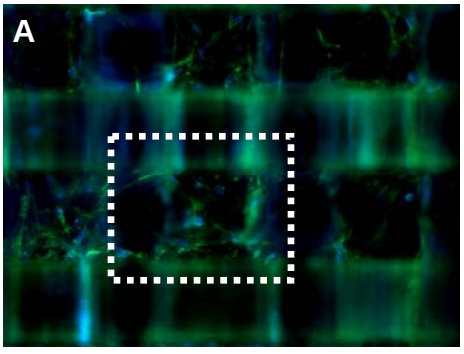
- HepG2
- MCF-10A
- Fibroblasts
- Keratinocytes
- Stem Cells



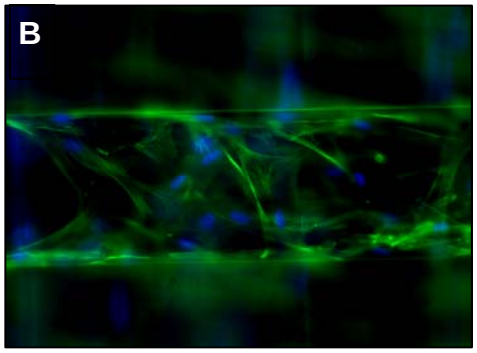




Superior results from HepG2 cells cultured on 3D Insert™-PS scaffolds! Equal numbers of HepG2 cells were seeded on 2D 96-well plates and on 96-well 3D Insert™-PS scaffolds. HepG2 cells on 3D Insert™-PS form 3D aggregates (B) whereas 2D HepG2 cells form only a monolayer (A). After 24 h, cells were treated with 10 µm Rifampicin and Vehicle (0.1% DMSO) for 72 h and assayed for cell viability (C) and P450 induction (D). After Rifampicin treatment, 3D HepG2 cells are more resistant to toxic effects and have higher P450 induction compared with cells cultured in 2D.



Adult human fibroblasts proliferate and extend across scaffold pores as dense cell sheets. Immunofluorescence was performed at Day 5. Cells within scaffolds were imaged using an inverted fluorescent microscope. Green: F-actin, Blue: DAPI, 100x (A), 200x (B).



3D Biotek

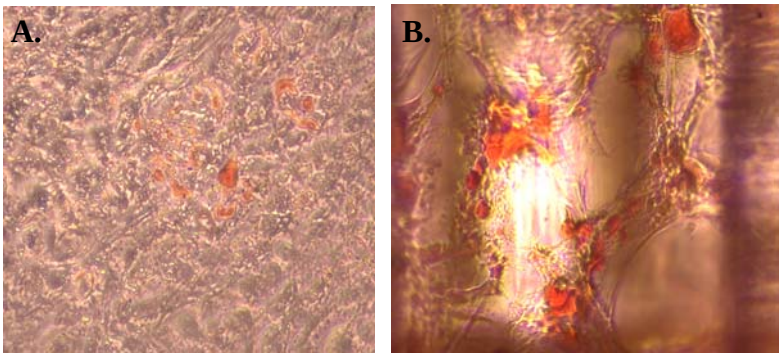
Contract Lab Services

We Make It Even Easier!

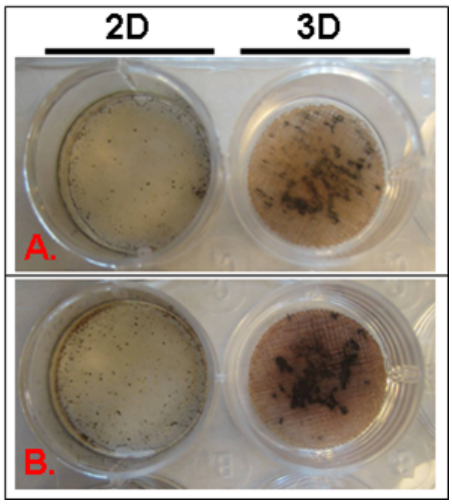
Use our extensive experience with 2D and 3D assays to your advantage. 3D Biotek features, but is not limited to, the following:

- 2D and 3D Proliferation/Metabolic Assays
  - *DNA Fluorescent Detection, MTT, Alamar Blue, Neutral Red*
- 3D Cell-Drug Interactions
  - *2D and 3D Toxicity Assays*
  - *Multiplexing Assays, ADME/Tox*
- 2D and 3D Stem Cell Differentiation/Characterization Assays
- Light and Fluorescent Microscopy

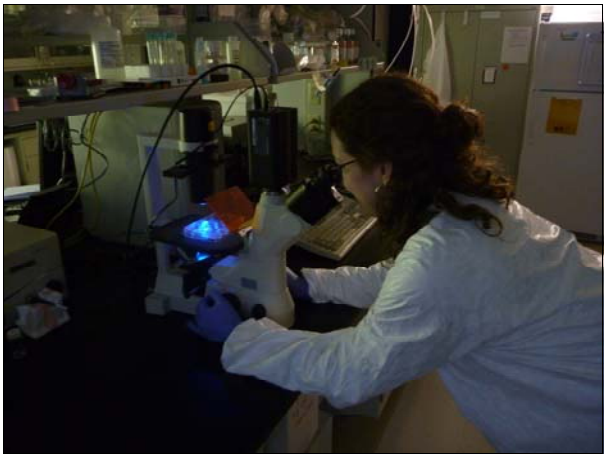
Discover what 3D can do for YOU!

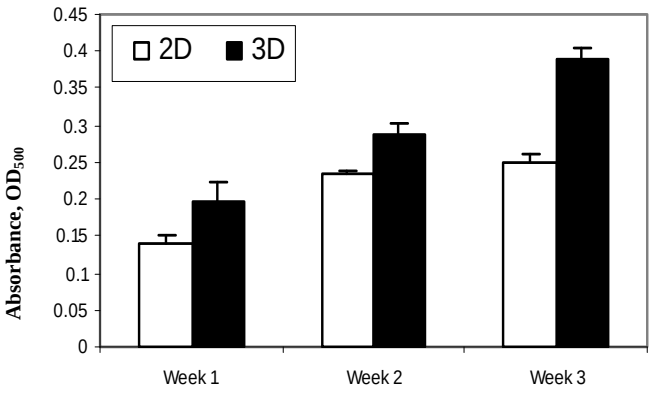


Faster adipocytic differentiation with 3D Insert™ scaffolds! Following adipogenic induction, differentiating 2D (A) and 3D (B) hMSCs were assayed with Oil-Red-O (100x).



Superior osteoblastic differentiation on 3D Insert™-PS scaffolds! Following osteoblastic induction, cells were stained by Von Kossa assay at days 14 (A) and 21 (B). 7F2 mouse osteoblastic cells on 3D Insert™-PS scaffolds showed more mineralized nodule formation compared with formation compared with cells in 2D TCP.





Best Customer Service and Technical Support

Only 3D Biotek offers a full range of customer service and technical support, and covers the broadest applications in the 3D Cell Culture Industry.

Along with your purchase of the finest 3D cell culture products, we offer the following services to assist your research:

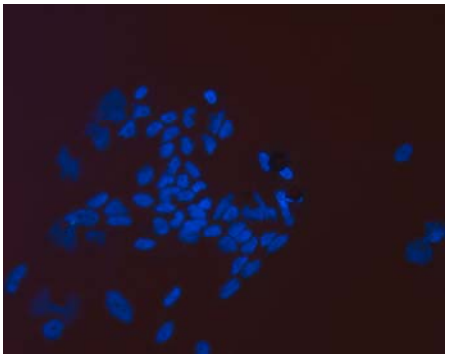
- **Customized Designs and Manufacturing of Specialty 3D Scaffolds**
- **Support Broad 3D Cell Culture With Various Cell Lines**
- **Drug Screening Studies Using Normal Primary Cells**

  Hepatocytes
  Myocytes
  Osteoclasts
  Osteoblasts
  Periosteal Cells

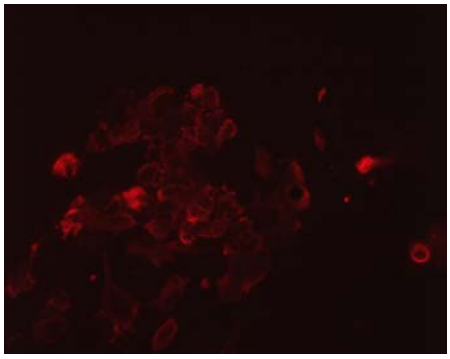
- **Drug Screening Studies Using Primary Cancer Cells, Such As**

  Lung Cancer
  Liver Cancer
  Colon Cancer
  Breast Cancer
  Gliomatosis Cerebri (Infiltrative Diffuse Astrocytosis)

- **Customer Training for 3D Cell Culture**
- **and much more…**



Human Primary Endometrium
Stromal Cells



Human Primary Endometrium
Glandular Epithelial Cells

3D Biotek

Biological Research in 3-Dimension

We also provide cell culture consumables at *unbeatable prices* that are compatible with our 3D Insert™ products.

To learn more about our products and for purchasing information, please visit our website at

www.3DBiotek.com

3D Biotek, LLC.

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www.3DBiotekStore.com
info@3DBiotek.com