

## WHY USE FLEXCELL'S CULTURE PLATES?

- Rigorously tested and guaranteed to be of the highest quality matrix-coated or untreated silicone elastomer or polystyrene culture plates.
- Well characterized elastomer properties.
- Equibiaxial or uniaxial strain applications.
- Strain applications simulating *in vivo* strains.
- **Five** different matrix coatings and **one** amino hydrophilic.
- **Thirteen** different types of culture plates / surfaces!
- Achieve a more natural environment *in vitro*.
- Gamma sterilization assures a sterile growth surface.

### Matrix-Bonded and Charged Culture Plate Growth Surfaces

Flexcell's unique culture plates provide researchers with matrix bonded growth surfaces that promote attachment and growth of a variety of cell types. Matrix coatings, such as type I collagen peptides, elastin, fibronectin as RGD repeat peptides, and laminin as YIGSR peptides, enhance attachment of specific cell types. These specialty growth surfaces help to better simulate the *in vivo* environment.

### Grow cells in a more natural matrix environment.

The BioFlex, Tissue Train, UniFlex, Flex and SurFlex series culture plates provide the investigator with the ability to grow cells *in vitro* in a manner that better simulates an *in vivo* environment. Culture plate growth surfaces are bonded with extracellular matrix proteins to promote cell attachment. Extracellular matrix components such as peptides of **collagen, elastin, fibronectin, and laminin** are attachment factors that mediate adherence to substrate. These peptides are covalently bonded to the culture plate rubber membranes or plastics.

The Flexcell Tension System provides a strain component for dynamically culturing cells *in vitro*. Researchers use the Flexcell culture plates together with the tension system to apply a defined, controlled, static or variable duration cyclic tension to cells. Flexcell's culture plates are stringently tested to assure the highest

quality control and the best cell attachment and growth possible.

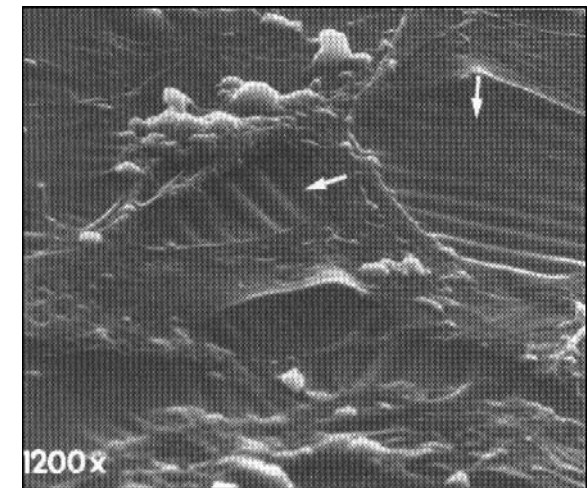


Figure 14. Scanning electron micrograph of osteoblasts stretched on a Flex I membrane for 13,000 cycles. NOTE the wrinkles (arrows) in the rubber substratum as a result of cell contraction and the undulations in the pseudopods. (Photo courtesy of Dr. H. Hicks).

### Superior cell attachment, reliability, and high performance.

With Flexcell's specialty culture plates you no longer need to spend time developing and testing protocols for coating your plates. Attachment factors are applied using our proprietary methods that result in optimal cell adherence and clarity for viewing cells. (See special methods for viewing cells on our flexible bottomed elastomer plates, pg. 23). Culture plates are sterilized with gamma radiation and have a shelf life of one year.

# MATRIX-BONDED GROWTH SURFACES

**Flexcell culture plates are available with the following treatments:**

**Genetic type I collagen** for improved attachment and adherence of cells including:

- Continuous cell lines
- Primary cells
- Osteoblasts
- Chondrocytes
- Tendon fibroblasts
- Aortic, venous, and capillary endothelial cells
- Lung type II epithelial cells
- Ligament fibroblasts
- Smooth, striated and cardiac
- Myoblasts
- Myocytes

**Fibronectin**, as RGD repeat peptides, and **ProNectin F** for the improved attachment of cells including:

- Fibroblasts
- Embryonic cells

**Laminin**, as YIGSR peptides, for the improved attachment of cells including:

- Glial cells
- Neurons
- Cells grown on type I collagen or ProNectin F
- Astrocytes

**Positively charged amino hydrophilic** for the improved attachment of cells including:

- Endothelial cells
- Smooth muscle cells

**Elastin** for the improved attachment of cells including:

- Endothelial cells
- Smooth muscle cells

*\* See the integrin table below to match your cell's integrin panel with the appropriate growth surface.*

**Vertebrate Integrins Grouped in Subfamilies Sharing a Common  $\beta$  Subunit**

Subunits		Ligands Sequenced	Minimal Sequence of Integrin Binding Site*
$\beta_1^+$	$\alpha_1$	Collagen, Laminin	
	$\alpha_2$	Collagen, Laminin	
	$\alpha_3$	Fibronectin, Laminin, Collagen	
	$\alpha_4$	Fibronectin, VCAM-1	
	$\alpha_5$	Fibronectin	
	$\alpha_6^+$	Laminin	
	$\alpha_7$	Laminin	
	$\alpha_8$	?	
	$\alpha_V$	Vitronectin, Fibronectin	
$\beta_2$	$\alpha_L$	ICAM-1, ICAM-2	
	$\alpha_M$	C3b component of complement (inactivated), Fibrinogen, Factor X, ICAM-1	
	$\alpha_X$	Fibrinogen, C3b component of complement	
$\beta_3^+$	$\alpha_{IIb}$	Fibrinogen, ProNectin F, von Willebrand factor, Vitronectin, Thrombospondin	RGD, KQAGDV
	$\alpha_V$	Vitronectin, Fibrinogen, von Willebrand factor, Thrombospondin, Fibronectin, Osteopontin, Collagen	RGD
$\beta_4^+$	$\alpha_8^+$	Laminin	
$\beta_5$	$\alpha_V$	Vitronectin	RGD
$\beta_6$	$\alpha_V$	Fibronectin	RGD
$\beta_7$	$\alpha_4$	Fibronectin, VCAM-1	EILDV
	$\alpha_{IEL}$	?	