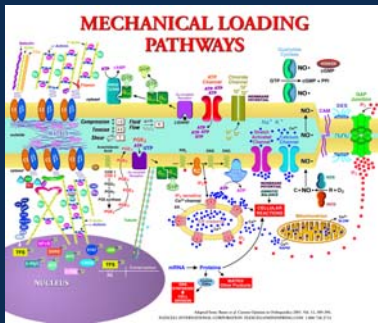


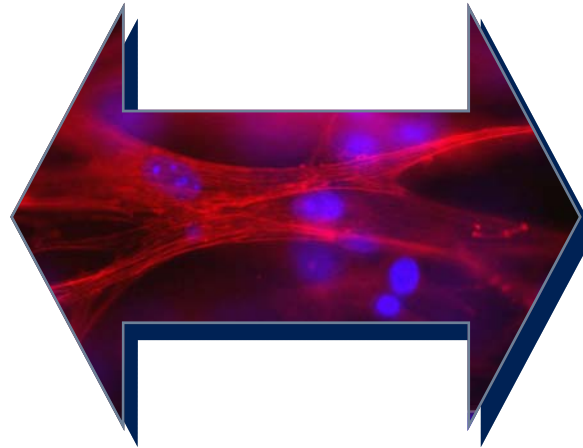
## Why culture cells in a mechanically active environment?

*Cells are subjected to compression, tension, and shear in the body and undergo acute and adaptive biochemical changes in response to deformation. Stressing cells in culture simulates the in vivo environment causing dramatic morphologic and biochemical responses. Flexcell®'s tension, compression, and fluid shear systems have broad applications since strain, compression, or fluid flow have been found to induce biochemical changes in cells derived from a variety of tissues including cardiac, skeletal and smooth muscle, lung, vascular endothelium, skin, tendon, ligament, cartilage, and bone.*



Pathways activated in response to applied mechanical load.

*Culturing cells*



*in a mechanically active environment*

**Flexcell®**  
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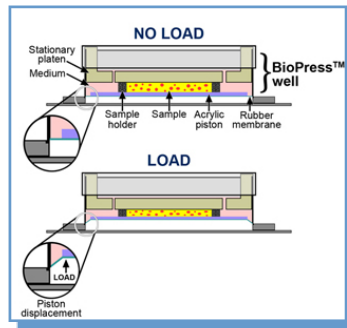
## **FX-5000™** **COMPRESSION** **SYSTEM**

*Apply compression to tissue samples or 3D cell-seeded constructs*



# Flexcell® FX-5000™ Compression System

The FX-5000™ Compression System is a patented, computerized, pressure-operated instrument that applies a defined controlled, static or variable duration cyclic compression, to cells growing *in vitro*. This system utilizes regulated air pressure to deflect flexible-bottomed BioPress™ culture plates compressing a tissue sample or 3D cell culture between a piston and a stationary platen. This system can apply up to 14 pounds of applied force.



Application of unconfined compression to cells in a BioPress™ well.



Bio-Press™  
Culture

## Highlights

Apply cyclic or static compression to cells in 3D culture.

Simulate *in vivo* tissue forces and frequencies in an *in vitro* setting.

Contains state-of-the-art digital valves to automatically regulate and maintain pressure for a specified compression regimen.

Works with BioPress™ culture plates.

Multiple frequency, amplitude and waveform changes can be programmed in one regimen.

Drives up to four independent FlexLink® remote compression and/or tension controllers.



Flexcell® FX-5000™ Compression System

## Cell Signaling

The StagePresser™, a single well embodiment of the compression system, is designed to compress a single tissue sample or cells in 3D culture while viewing the cellular activity under a microscope. The FX-5000™ Compression System controls the compression frequency, amplitude, waveform, and cycles (or time period).



StagePresser™ Microscopy Device\*

## FX-5000™ Compression System includes:

- Host computer with monitor
- FlexSoft FX-5000™ software
- FX5K™ Compression FlexLink®
- Compression accessory package:
  - ◊ BioPress™ baseplate and four gaskets
  - ◊ Compression clamping system
  - ◊ Four BioPress™ culture plates
  - ◊ Tubing and quick disconnects

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\*StagePresser™ is sold separately.