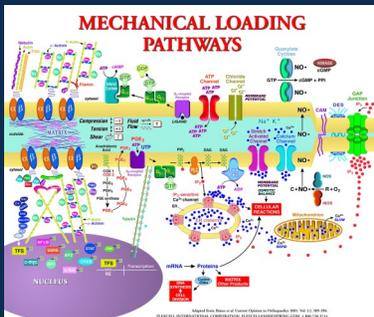


Why mechanical load *in vitro*:

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. Several of the pathways activated in response to mechanical load can be analyzed in real-time. Flexcell®'s microscopy devices can be used to visualize cells in both 2D and 3D culture systems in real-time that are being subjected to mechanical load.



Pathways activated in response to applied mechanical load.

About Us:

Flexcell has been designing, developing and manufacturing dynamic cell stretching bioreactor systems and disposables for over 30 years.

- ◆ First to commercialize use of vacuum to stretch cells *in vitro*
- ◆
- ◆ Cited in 4,000+ scientific publications
- ◆ Used in 1,300+ labs world-wide

Contact us to learn more about our complimentary product trials!

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Flexcell®

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MICROSCOPY DEVICES

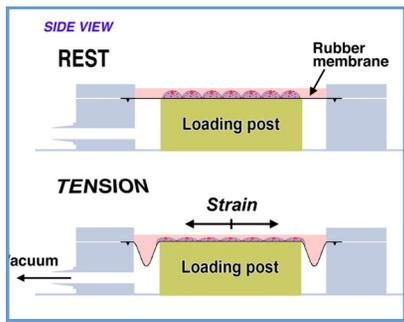
View real-time cellular responses to mechanical load



Flexcell[®] Microscopy Devices

StageFlexer[®]

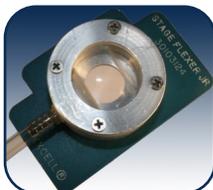
The StageFlexer[®] is designed to strain cells in monolayer while viewing the cellular activity under a microscope. The FX-5000[™] or Flex Jr. Tension System can control the strain frequency, amplitude, waveform, and cycles (or time



Strain application to cells in a StageFlexer[®]

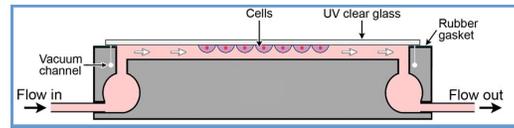
StageFlexer[®] Jr.

The StageFlexer[®] Jr. accepts membranes removed from BioFlex[®], UniFlex[®], or Tissue Train[®] culture plates and allows the user to continue to strain cells while observing responses in real-time.



FlexFlow[™]

The FlexFlow[™] is a parallel plate laminar flow device designed to apply fluid shear stress and/or cyclic strain to cells in culture while providing a means for viewing cell activity under a microscope in real time. The FlexFlow[™] fits on the stage of a standard upright microscope.



Shear stress application to cells in a FlexFlow[™] device

Inverted StageFlexer[®]

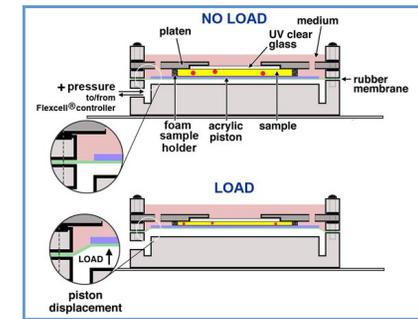
The Inverted StageFlexer[®] microscopy device can be used with a standard upright or inverted microscope. Cells are grown and stretched on a 55mm diameter silicone elastomer membrane, which has 22.9 cm² total cell growth area. It has an easy to use design and can attach to any microscope stage. It works with FX-5000[™], FX-6000[™] or Flex Jr[™] Tension Systems.



NEW! Inverted StageFlexer[®] Microscopy

StagePresser[™]

The StagePresser[™] 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.



Compression application to cells in a

Device	Strain Range
StageFlexer [®]	1.6% - 14.8% (25 mm)
	1.9% - 13.4% (28 mm)
	2.1% - 8.6% (31 mm)
Inverted StageFlexer [®]	1.6% - 12% (25mm only)
StageFlexer [®] Jr.	1.8% - 13.8% (BioFlex [®])
	2.5% - 17.7% (Tissue Train [®])
	1.5% - 7.9% (UniFlex [®])
FlexFlow [™]	0.8% - 4.3%