TECH REPORT

105:

Culturing Cells on Culture Slips®

Document: Culture Slip Tech Report, Rev 4

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Culturing Cells in a Mechanically Active Environment™
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Culture Slips® are Teflon®-bordered 75 x 25 x 1 mm glass culture surfaces[1] that are either untreated or bonded with peptides of type I collagen, type IV collagen, elastin, fibronectin (RGD repeat as Pronectin F), or laminin (as the YIGSR peptide; Fig. 1). The Teflon® border provides a means to culture cells only in the area exposed to fluid flow. The bonded peptides increase cell attachment.

NOTE: *See Tech Report 106: Matrix Bonded Growth Surfaces for more information on culturing cells on Flexcell®'s matrix bonded growth surfaces.*

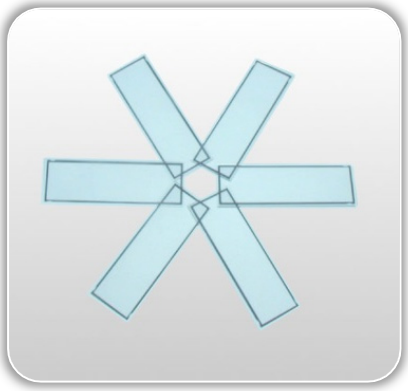

Figure 1. *Culture Slips®*

Cells are plated on the growth surface at the desired density (i.e., 10,000-25,000 cells/cm^2) in 3 to 5 ml of medium. ***Be sure to plate cells on the side where the Teflon® border is printed.*** Once the cells have attached, additional medium is added, and the culture vessel is placed into a CO_2 incubator at 37 °C. Once the cells have grown to the desired confluency, the Culture Slips® can be removed from the culture dishes and inserted into the Streamer® or FlexFlow™ flow device for the experiment (Figs. 2-3). When the flow experiment is over, the Culture Slips® can be returned to their original culture vessel for post-flow analysis (i.e., measurement of secreted molecules post-flow).

Figure 2. *Streamer®*

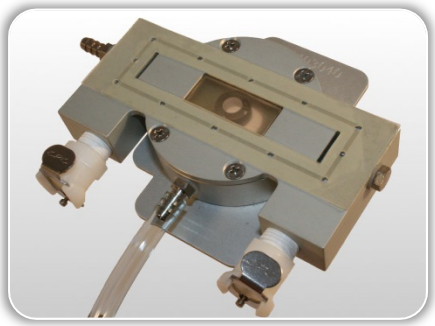

Figure 3. *FlexFlow™*

If you experience cell detachment problems during flow regimens, try the following protocol for improved cell attachment to the Culture Slips®.

1) Plate ½ of the normal amount of cells on the Culture Slips®.

2) Reduce the media serum concentration (5% preferably) to slow the cell growth rate and to give the cells time to make their own protein matrix which will improve attachment.

3) Allow the cells to grow to confluency (4-5 days) before starting the experiment.

[1] Non-Teflon® bordered Culture Slips® are also available for use with the FlexFlow™ only. These culture slips are 75 x 24 x 0.2 mm