



Tech Report 105:

Culturing Cells on Culture Slips®

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Culturing Cells in a Mechanically Active Environment™
Flexcell International Corporation • 437 Dimmocks Mill Road, Suite 28 • Hillsborough, NC 27278
800-728-3714 • (919) 732-1591 • FAX: (919) 732-5196 • www.flexcellint.com

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Culture Slips® are Teflon®-bordered 75 x 25 x 1 mm glass culture surfaces¹ that are either untreated or bonded with peptides of collagen, elastin, fibronectin (RGD repeat as Pronectin F), or laminin (as the YIGSR peptide). The Teflon® border provides a means to culture cells only in the flow area. The bonded peptides increase cell attachment.

Cells are plated on the growth surface at the desired density (i.e., 10-25,000 cells/cm²) 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 CO₂ incubator at 37 °C. Once the cells have grown to the desired confluency, the Culture Slips® can be removed and inserted into the Streamer® or FlexFlow® flow device for the experiment. 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).

If you experience cell detachment problems during flow regimens, try the following protocol for better 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