

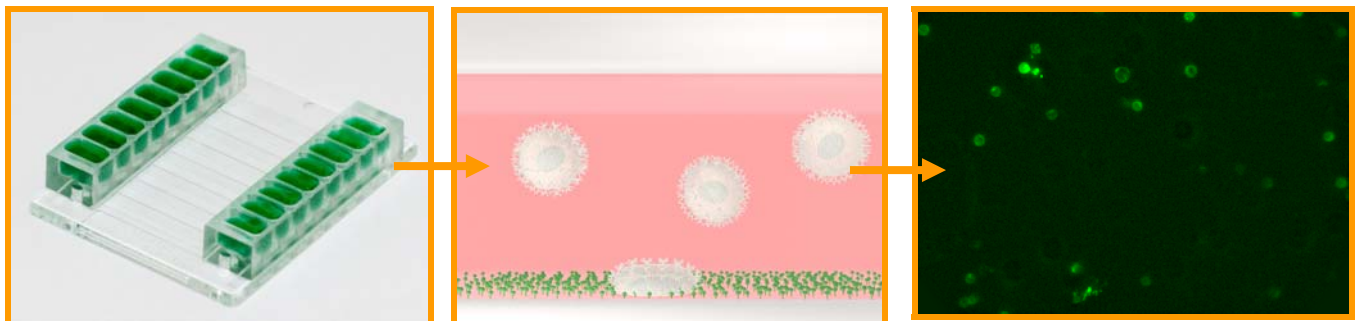
# Vena8 Fluoro+™ Biochip: For cell receptor-ligand studies under conditions mimicking physiological flow

**Vena8 Fluoro+™ Biochips** contain 8 parallel enclosed microcapillaries for continuous flow cell based assays. Each microcapillary may be coated with a different adhesion molecule.

Cell suspensions may then be injected using the Mirus™ Nanopump which supports a range of shear stresses for dynamic flow based assays. **Vena8 Fluoro+™ Biochips** are particularly suited for applications requiring fluorescent immunostaining or confocal microscopy observation combined with flow based experiments.

## COMPATIBLE WITH CONFOCAL MICROSCOPY!

**Vena8 Fluoro+™ Biochips** are supplied in packs of 10, facilitating **80 experiments per pack**.



Vena8 Fluoro+™ Biochip

Illustration close-up:  
Cell adhesion inside  
ligand-coated microchannel of  
Vena8 Fluoro+™ Biochip

Example: Adhesion of Human  
PBMC (stained with FITC  
conjugated to CD3 antibody) to  
VCAM-1 coated channel at  
shear stress of 0.5 dyne/cm<sup>2</sup>

## Features

- **20x, 40x, 60x, 100x short working distance** magnification microscopy; **60x, 100x oil immersion** microscopy.
- Brightfield / Phase contrast / Fluorescent microscopy.
- Low level fluorescence imaging, low fluorescent background.
- Compatible with **confocal microscopy**.
- Suitable for a wide range of cell suspensions and whole blood.
- Easy to coat microcapillaries with a range of different adhesion molecules.
- Biochip plastic is optically clear permitting detailed microscopy studies.
- 0.05 – 450 dyne/cm<sup>2</sup> shear stresses easily obtained and controlled by the **Mirus™ Nanopump** and **FlowAssay™ software**.
- Real time imaging under flow conditions.

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<b>Performance Specifications</b>	
<b>Biochip Coating:</b>	
Range of proteins:	VCAM, ICAM, MAdCAM, Fibronectin, vWF, Fibrinogen, Collagen etc.
Minimum Sample Volume:	~10 µL
<b>Cell Suspension Assay:</b>	
Cell types	<ul style="list-style-type: none"> <li>• T-cells: primary &amp; cell lines e.g. HUT 78</li> <li>• Monocytes: primary and cell lines; e.g. THP-1</li> <li>• Eosinophils</li> <li>• Neutrophils</li> <li>• Platelets</li> <li>• PBMCs, <b>whole blood</b>, etc.</li> </ul>
Minimum Sample Volume:	~10 µL
Maximum Sample Volume:	100 µL (Vena8 Fluoro+ microwells)
Shear Stress Precision:	<0.5% CV
Shear Stress Range for cell suspension:	0.05 - 10 dyne/cm <sup>2</sup> ; steps of 0.05 dyne/cm <sup>2</sup> (100 µL syringe)
Shear Stress Range for whole blood*:	2.25 – 450 dyne/cm <sup>2</sup> (1 mL syringe)
Volumetric Flow Rates:	100 nL/minute - 20 µL/minute (100 µL syringe); 5 µL/minute – 1 mL/minute (5 mL syringe)
Sample Volume Aspiration Accuracy:	±1%
Shear Stress Accuracy:	±0.5%
Sample Volume Aspiration Precision:	<1% CV

\*Considering human whole blood with a viscosity of 4.5 cP

\*\*Given for the flow of distilled water in a microcapillary with dimensions: 400 µm (W) x 100 µm (D) x 20 mm (L).

<b>Technical Specifications</b>	
Material:	Acrylic, Topas
Number of channels per biochip:	8
Volume of each channel:	0.8 µL
Dimensions of each channel:	400 µm (W) x 100 µm (D) x 28 mm (L)
Dead volume at input port:	0.1 µL
Thickness of bottom substrate:	0.17 mm