we are cellix

Technical Note

VenaDeltaY™ Biochips

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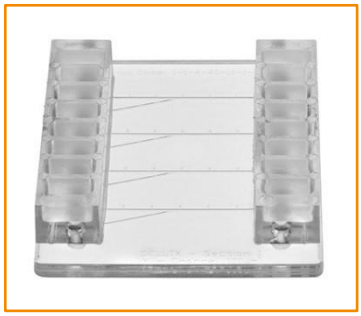
VenaDeltaY Biochips: for dual flow / dual injection of samples

VenaDeltaY biochips contain branching microchannels for dual flow / dual injection of samples. Compatible with fluorescent microscopy. Using Cellix's microfluidic pumps, samples including cell suspension and drug compounds may be perfused via dual-injection at the Y-channel end facilitating laminar flow of two streams.

These biochips are ideal for studying chemotactic gradients via dual-injection, dual flow, multilaminar flow and diffusion.

VenaDeltaY biochips are supplied in packs of 10, facilitating 40 experiments per pack.
Note: minimum order of 6 packets of chips.



VenaDeltaY1 biochip

VenaDeltaY2 biochip

VenaDeltaY Features:

- 20x, 40x, 60x long working distance magnification microscopy.
- Brightfield / phase contrast / fluorescent 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^2 shear stresses / shear flow rates easily obtained and controlled by Cellix's microfluidic pumps.
- Shear stress / shear flow rate may be pre-set to be incrementally increased during an assay.
- Real time imaging under flow conditions.

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Performance and Technical Specifications:

Performance specifications		
Biochip coating options	Range of proteins	VCAM, ICAM, MAdCAM, fibronectin, vWF, fibrinogen, collagen, etc.
	Range of chemokines	IL-8, SDF-1, MCP-1, etc.
Minimum sample volume		~10 µL
Cell types for suspension assay		T-cells: primary & cell lines, e.g. HUT 78
		Monocytes: primary and cell lines; e.g. THP-1
		Eosinophils
		Neutrophils
		Platelets, PBMCs, whole blood, etc.
Maximum sample volume		100 µL (Vena8 microwells)
Shear stress precision		<0.5% CV
Shear stress range for cell suspension		0.05–10 dyne/cm^2; steps of 0.05 dyne/cm^2 (100 µL syringe)
Shear stress range for whole blood*		2.25–450 dyne/cm^2 (1 mL syringe)
Volumetric flow rates**		100 nL/min–20 µL/min (100 µL syringe); 5 µL/min–1 mL/min (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 28 mm (L).

Technical specifications	
Material	Acrylic
Number of channels per biochip	4
Volume of each channel	VenaDeltaY1: ~1.6 µL
	VenaDeltaY1: ~3 µL
	VenaDeltaY2: ~2.3 µL
Dimensions of each channel	VenaDeltaY1: 400 µm (W) x 100 µm (D) x 28 mm (L)
	VenaDeltaY1: 800 µm (W) x 120 µm (D) x 28 mm (L)
	VenaDeltaY2: 600 µm (W) x 100 µm (D) x 28 mm (L)
Dead volume at input port	0.1 µL
Thickness of bottom substrate	0.5 mm