

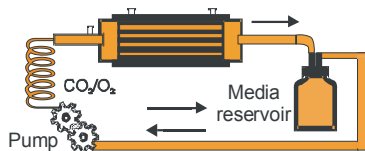
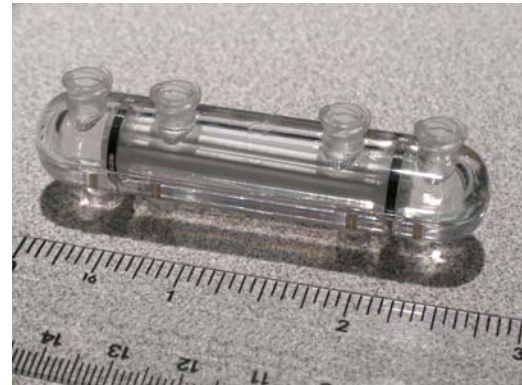
Flocel

Flocel Inc., 4415 Euclid Ave., Suite 421, Cleveland, Ohio 44103
(216) 619-5903, Fax (216)791-6744, www.flocel.com

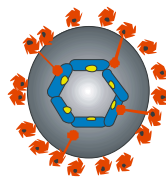
Dynamic In-Vitro Blood-Brain Barrier Model

Every year millions of dollars are spent by pharmaceutical companies to develop and test drugs using in vitro models of the Blood-Brain Barrier (BBB), many of which end up not working in vivo. The Cleveland Clinic Foundation and CleveMed have partnered to form Flocel, Inc. to manufacture and market a practical in vitro model that more accurately reflects the BBB characteristics.

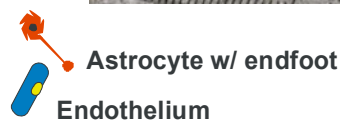
In contrast to other available models of the blood-brain barrier, the DIV-BBB respects the anatomical aspects of the in situ endothelial cell-astrocyte interactions. The DIV-BBB allows formation of physiological transendothelial resistance, and formation of gap junctions that can be easily visualized at the electron microscope or determined experimentally with the use of tracers.



DIV- BBB System



Cross Section of A single lumen



DIV-BBB Cartridge



Multiple Stacked DIV-BBB Cartridges

DIV-BBB Cartridge

Features:

- Controlled ratio of luminal to abluminal volume.
- Small size, only 2.75 inches long.
- Electrodes built into the cartridge.
- Low cost

Benefits:

- Matches volume ratio found in vivo.
- Reduces the number of cells required.
- TEER measurements are easily made.
- One-time use, no rebuilding the cartridge.

Specifications:

Hydrophobic capillaries

Trans-capillary pore size

Number of hollow fibers

Total lumen internal volume

Total lumen internal surface area

Volume of extraluminal space (ECS)

Total hollow fiber area in ECS

Accurel® PP Q3/2 (optionally pre-coated with ProNectin® F or Poly-D-Lysine)

nominal 0.2 μm

19

0.0123 $\text{in}^3 = 0.202 \text{ cm}^3$

2.09 $\text{in}^2 = 13.5 \text{ cm}^2$

0.070 $\text{in}^3 = 1.15 \text{ cm}^3$

3.50 $\text{in}^2 = 22.6 \text{ cm}^2$

Cartridges are delivered in a sealed bag, sterile and wetted with distilled water.

Specifications subject to change without notice. Accurel® is a registered trademark of Membrana GmbH. ProNectin® F is a registered trademark of Sanyo Chemical Industries.