

Prepare chip

Surface activation

Coat both channels with ER-1
Activate by UV treatment (20 min)



Coat chips with extracellular matrix

Top Channel – laminin 50 ng/mL
Bottom channel – collagen IV 320
ng/mL: fibronectin 80 ng/mL
Incubate overnight (37°C)

Seed cells

Top Channel

Dissociate EZ-sphere
Seed cells ($1-6 \times 10^6$ cells/mL)
Incubate overnight (37°C)
Wash cells that did not attach



Bottom Channel

Dissociate iBMECs
Seed cells ($14-20 \times 10^6$ cells/mL)
Incubate chip upside-down (3 h, 37 °C)
Flip chip to upright and incubate 3 h

Laminar flow 48 h post seeding

Insert chips to culture module

Prime pods (5 min)
Insert chip to pod
Run Regulate cycle (2 h)



Initiate flow

Flow rate 30-1000 μ L/h