

Figure S1. Device design

(a) Two identical layers containing 3 lanes divided by 2 rails are bonded together. (b) The three lanes correspond to different compartments of a blood vessel – extravascular space, vessel wall, and intravascular space. (c,d) In the assembled device, the intravascular and extravascular channels have cross sectional dimensions of 0.5 mm (width) X 1 mm (height). The microchannel representing the vessel wall is 1 mm (width) X 1 mm (height). The three channels are separated by 250 μm -tall rails.

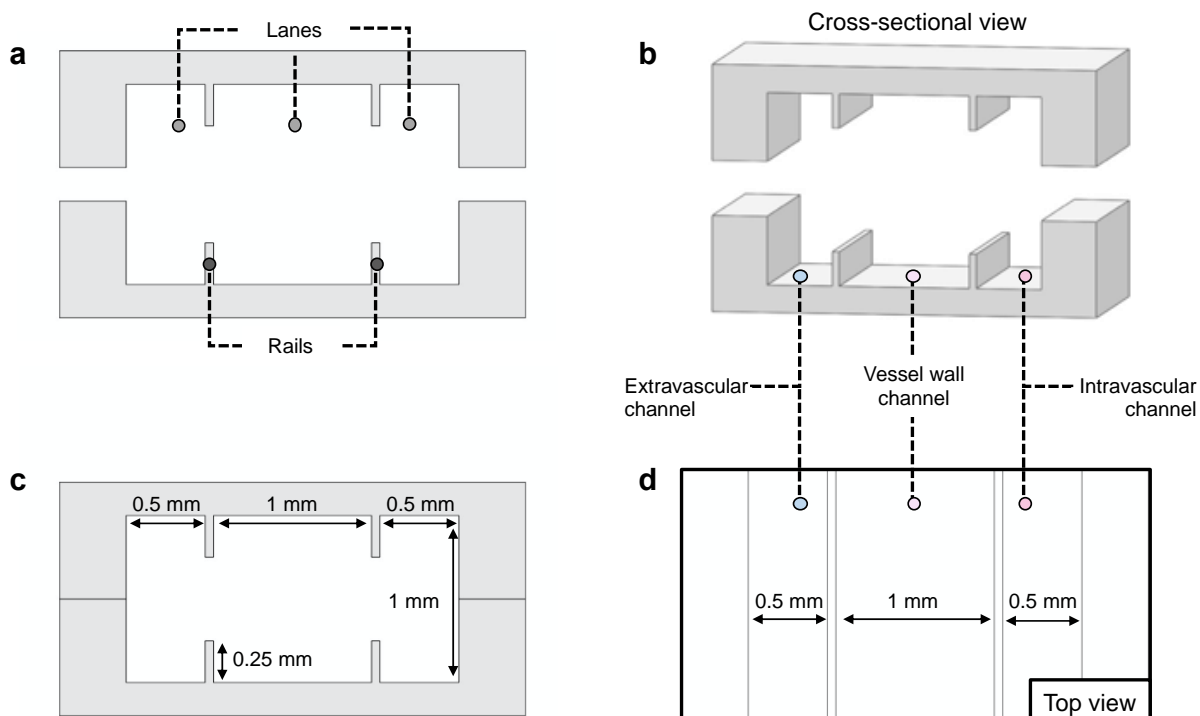


Figure S2. Experimental set up for flow control in the blood vessel-on-a-chip

Blood is pushed through the intravascular channel (I) using a syringe pump at a constant flow rate of 250 $\mu\text{L}/\text{min}$. HBSS buffer is pulled from a reservoir through the extravascular channel (E) at 1.25 $\mu\text{L}/\text{min}$.

