Supplementary Information (SI) for Lab on a Chip.

Integrated Microfluidic Multiple Electrode Aggregometry for Platelet Function Analysis

Supplementary Figures:

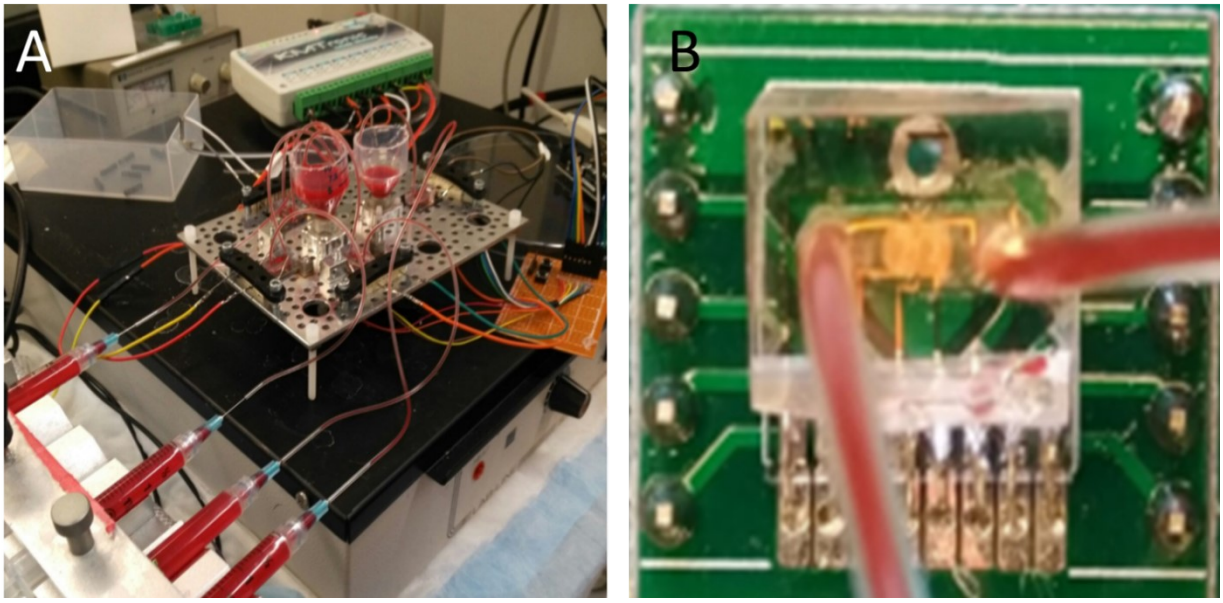

Figure S1: (A) Image of the uMEA benchtop testing setup for multiplexed uMEA measurement consisting of the multi-channel syringe pump, common blood vials with stirrer motors and four uMEA sensors alongside their respective electrical and fluidic connections. (B) Top-down close-up image of a uMEA sensor daughterboard. Shown are the fluidic inlets and outlets connected to the ends of the PDMS microfluidic channel, the uMEA gold microelectrode array positioned at the center of the channel as well as the wire-bonded connections between the MEA glass sensor and the daughterboard PCB.

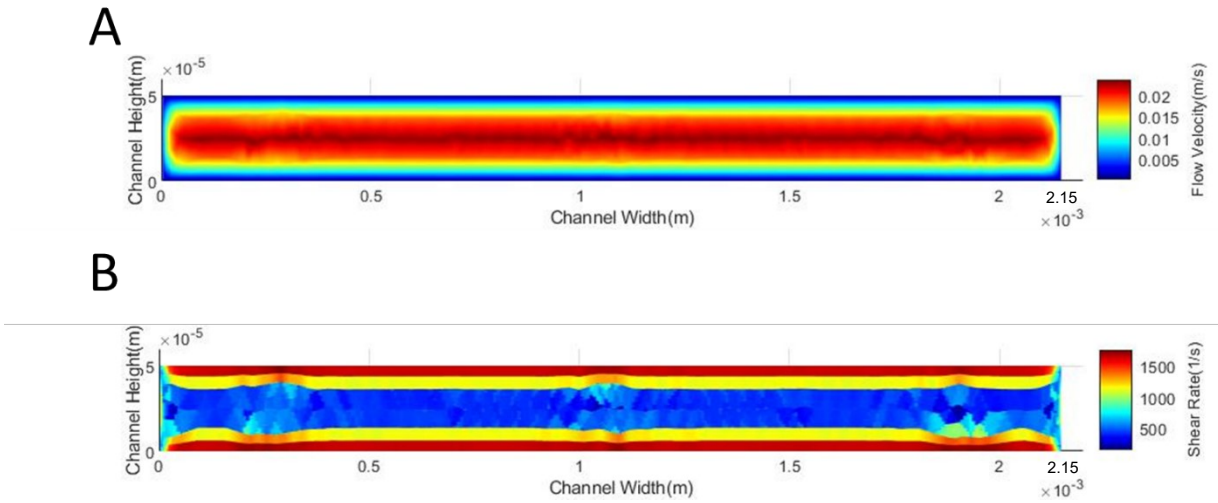

Figure S2: Flow characterization of simulated blood flow through the PDMS Microfluidic channel performed using COMSOL Multiphysics (A) Velocity profile on yz plane taken halfway along the channel (x = 3.5mm). (B) Shear rate plot on yz-plane taken halfway along the channel. The plot verifies that platelets in the vicinity of the bottom surface of the channel, where the uMEA microelectrode array is situated, experience shear rates that are within the physiologically relevant range ($\dot{\gamma}$~10-1000/s).

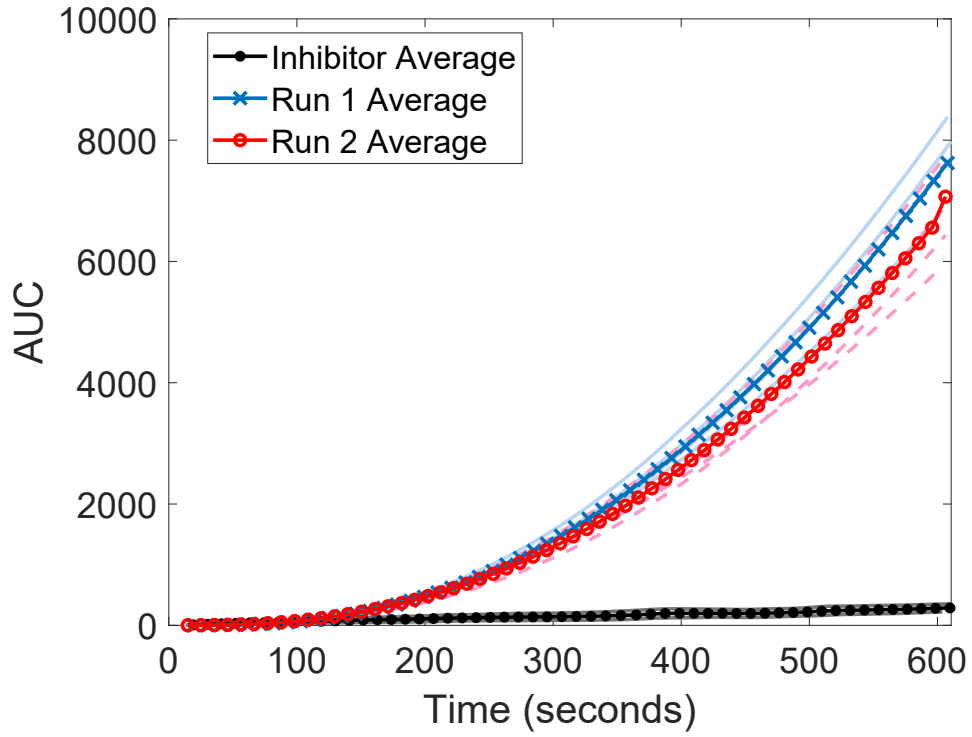

Figure S3: Area under curve (AUC) vs. time plots of the two run averages as well as the inhibitor average. The measurement frequency was f = 150kHz and time t=0s corresponds to when ADP was added into the blood vial. Graphs of individual trials are shown in the background, as faded curves, for reference.