

Supplementary Material

**Separation of platelets from whole blood using
standing surface acoustic waves in a microchannel**

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Platelet Activation Test

We have conducted an additional experiment to confirm our claim that there was no activation of platelet associated with either shear flow in a microchannel. Platelet activation test was performed by monitoring the expression of CD63-PE antibody solution (BD Bioscience, CA), which is widely used to verify minimal physiological effect in the separation process. Platelet samples were collected before and after separation with applying SSAW (439 mW). The former sample was prepared by taking the supernatant after centrifuging whole blood at 100g. In addition, an activated sample was prepared by applying high shear with centrifugation at 5000 g for 20 min, three times. All samples were stained with CD63-PE and incubated in the dark room for 30 min, simultaneously. FACScalibur (BD Bioscience, CA) was used to quantify the level of the CD63-PE expressions and the result is shown in Fig. S-1. After separation by SSAW, the intensity curve was slightly shifted to right but still closer to the curve of the initial sample. Thus, we could confirm that shear-induced platelet activation did not occur in our experiment.

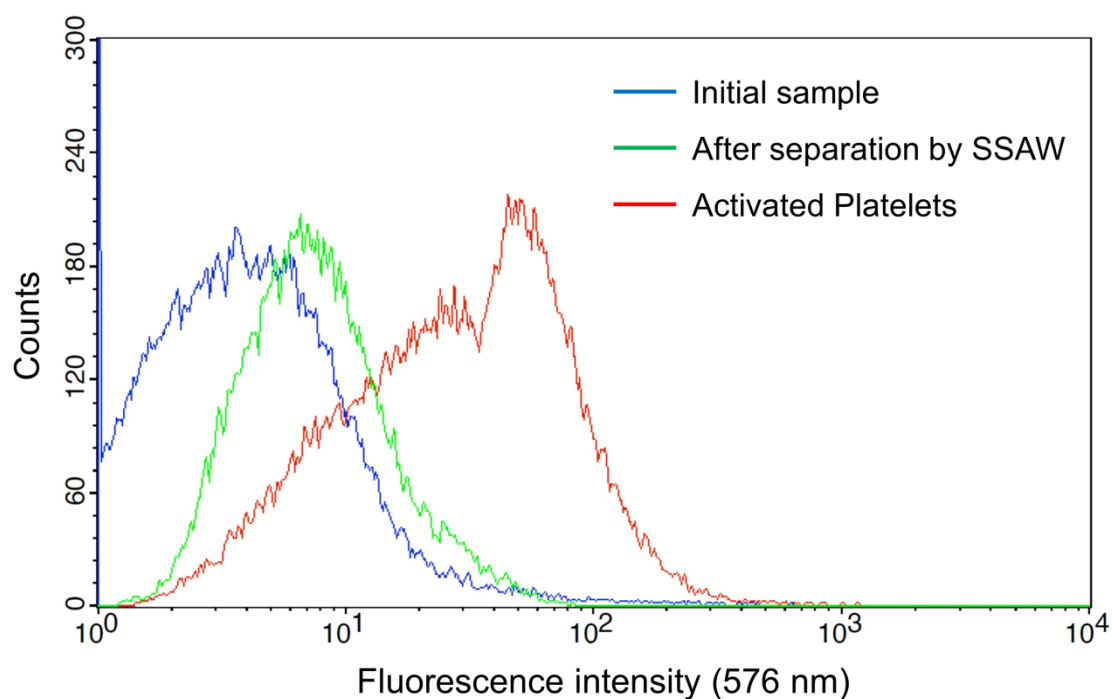


Fig.S-1: Measurement of platelet activation levels using anti-CD63-PE.