

Supporting Information

## ***In situ* single cell detection via microfluidic magnetic bead assay**

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This document contains the equivalent circuit for the single cell detection device.

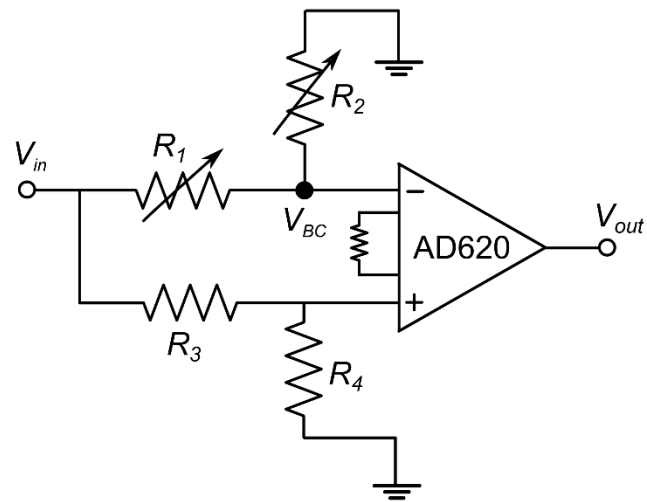
**The equivalent circuit for the single cell detection device.**

Fig S-1. The Equivalent circuit for the single cell detection device.  $R_1$  and  $R_2$  represent the resistance of the two successive Coulter counters.  $R_3=R_4=500\text{k}\Omega$ . The voltage output  $V_{BC}$  was amplified by the differential amplifier (AD620, Analog Device, USA) and output as  $V_{out}$ .