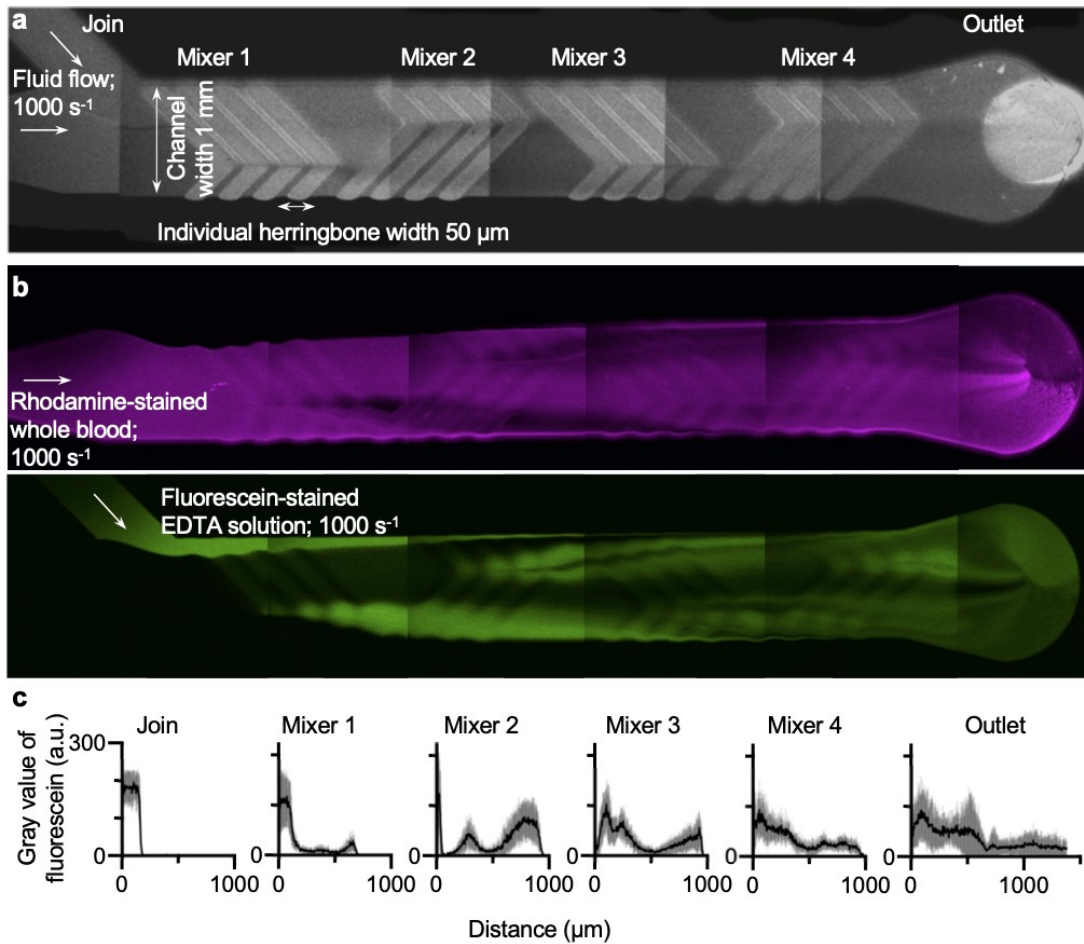


Supplementary fig. 1 Schematic of experimental set-up



Supplementary fig. 2 Details of the chaotic mixer (a) The chaotic mixer consists of $50 \mu\text{m}$ bands repeated across the top of the channel. (b) The chaotic mixer is sufficient to mix the EDTA stream across the width of the channel. Whole blood stained with rhodamine (magenta) was flowed into the device from the main inlet, and EDTA-solution stained with fluorescein (green) was flowed into the device from the EDTA inlet. By the end of the channel, fluorescein was present across the width of the outlet. (c) Plots of the pixel values confirm the presence of fluorescein across the width of the channel ($n=3$).