Supplementary fig. 1 Schematic of experimental set-up

- Metcal green 18 ga TE Needle leading to 5 cm silicone tubing ID 1 mm, OD 3 mm
- Ibidi 0.8 mm Y connector
- 5 cm silicone tubing followed by 10 cm Tygon tubing
- Tygon tubing inserts directly into a biopsy hole punched into PDMS of the microfluidic device
- Collagen and tissue factor patch
- Zeiss LSM510 inverted confocal microscope
- Tygon tubing leads to OHAUS Adventurer balance set to record values every 5 s
- Tygon tubing leads to waste; waste tubes cut to exactly the same length
- Metcal blue 22 ga TE Needle leading to Tygon tubing ID 0.5 mm OD 1.5 mm Formulation ND-100-80

Syringe pump 1; 1x5 mL syringe containing whole human blood; 1000 s⁻¹

Syringe pump 2; 1x1 mL syringe containing coagulation buffer; 1:9 buffer:blood

Syringe pump 3; 2x5 mL syringes containing 50 mM EDTA solution; 1000 s⁻¹
Supplementary fig. 2 Details of the chaotic mixer (a) The chaotic mixer consists of 50 µm 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).