Electronic Supplementary Information

Ultrasensitive detection of disease biomarkers using an immuno-wall device with enzymatic amplification

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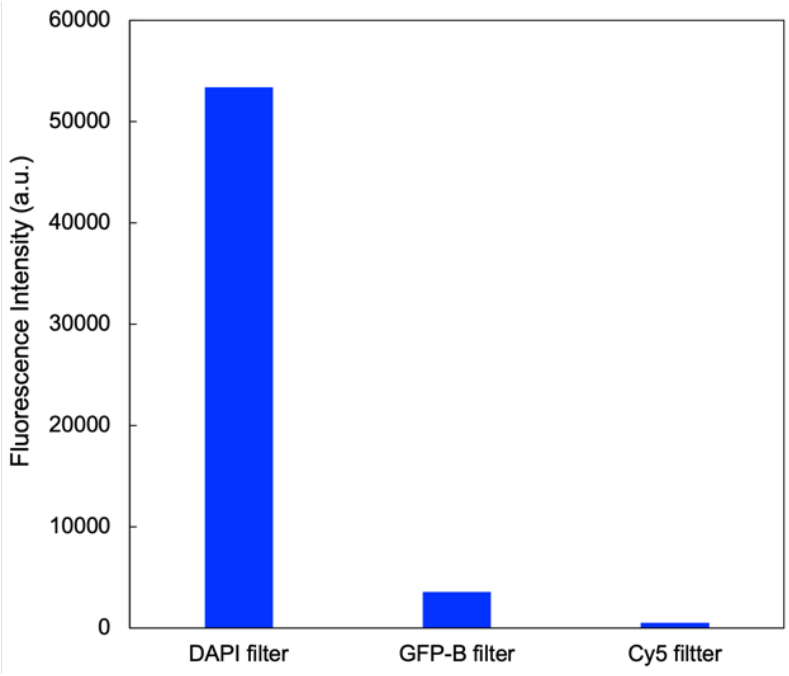

Fig. S1 Background signal of the immuno-wall obtained using various filters. Exposure time of the CCD camera was 1 s for all filters.

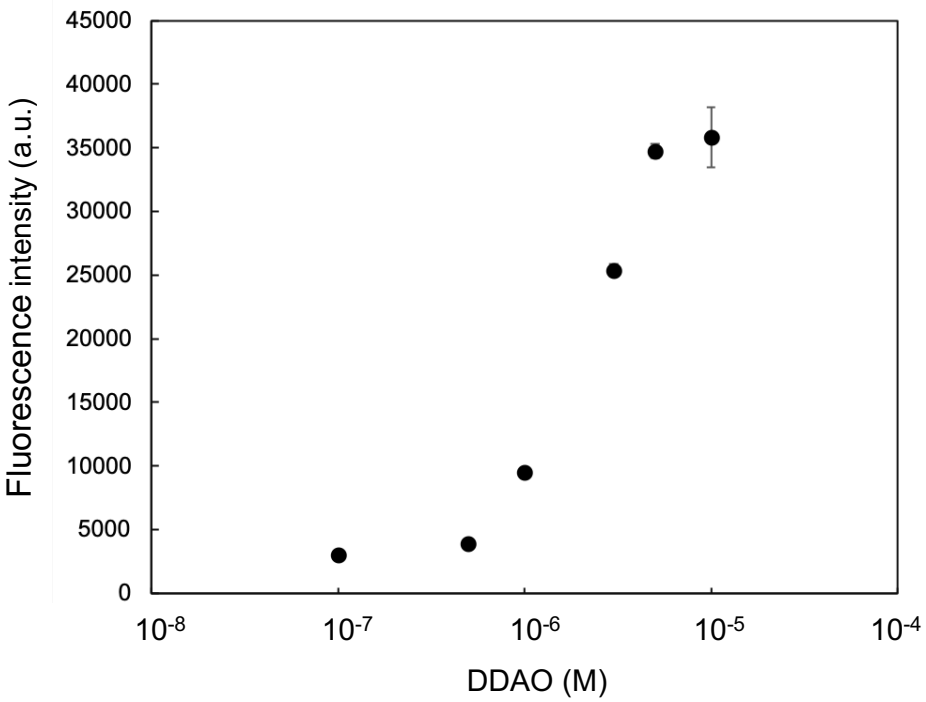

Fig. S2 Calibration curves of 9H-(1,3-dichloro-9,9-dimethylacridin-2-one-7-yl) (DDAO) in a microchannel without the immuno-wall. Exposure time of the CCD camera was 5 s.

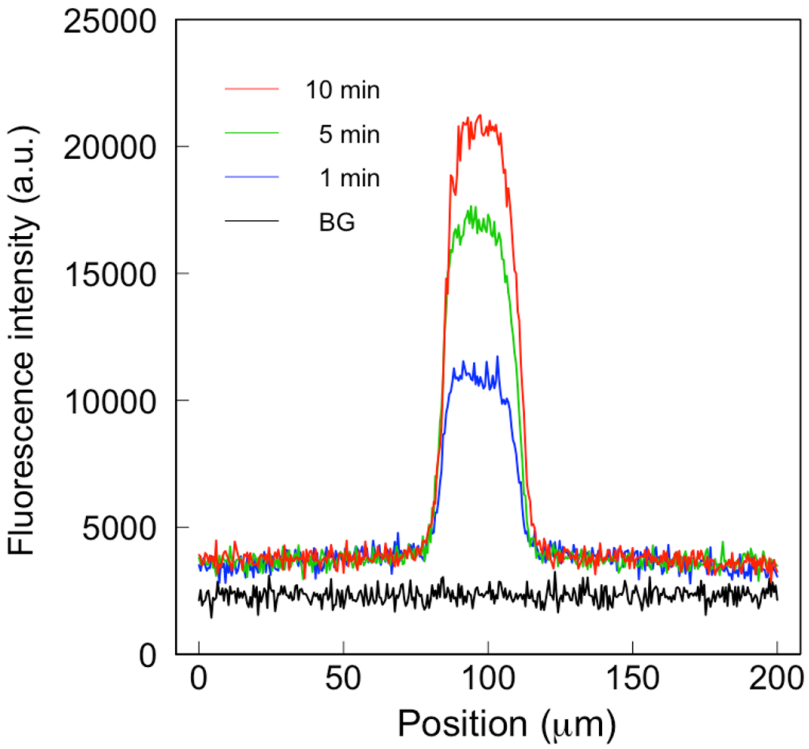

Fig. S3 Fluorescence intensity profile as a function of the position with injection of 0.5 μM DDAO.

Exposure time of the CCD camera was 5 s.

Table S1 Analytical performance of correlative devices for C-reactive protein (CRP) detection

Method	LOD[a]	Assay time (min)	Sample volume (μL)	Ref.
Immunoassay on a power-free microchip	17 pg/mL	23	0.5	(38)
Surface plasmon resonance-based immunoassay	1.2 ng/mL	5	50	(39)
Label-free immunoassay based on electron transfer	40 pg/mL	50	10	(40)
Paper-based device	5.0 μg/mL	22	0.5	(41)
Nanoribon sensors using a miniature bead-based enzyme-linked immunosorbent assay	50 pg/mL	60	10	(42)
Graphene/polyethylene glycol hybrids for single-step immunoassay microdevice	400 ng/mL	2	-	(43)
Immuno-wall device (Fluorescence-label)	**1.7 ng/mL**	**16**	**0.25**	**This work**
Immuno-wall device (Enzyme-label)	**2.5 pg/ mL**	**46**	**0.25**	**This work**

[a] LOD, limit of detection