

Supplementary Information

Colorimetric Paper-Based Immunosensor for High-Sensitivity C-Reactive Protein (hs-CRP) Detection

D. Lawanstien^a, Pakakan Ngernpradab^a and M. Srisa-Art ^{a,*}

^aElectrochemistry and Optical Spectroscopy Center of Excellence, Department of Chemistry, Faculty of Science, Chulalongkorn University, Bangkok 10330, Thailand

*e-mail: monpichar.s@chula.ac.th

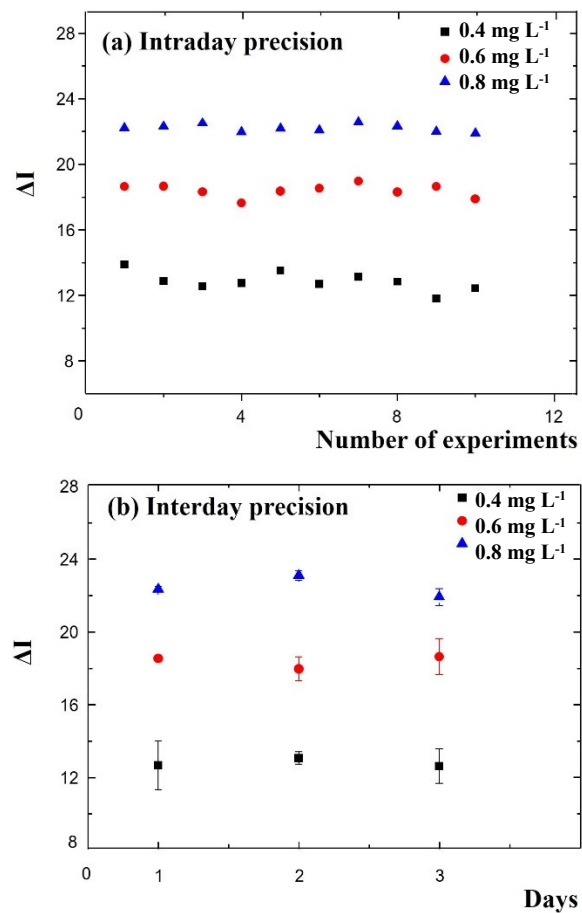


Fig. S1 Intrainday (a) and interday (b) precisions for the detection of CRP at three concentration levels including 0.4, 0.6 and 0.8 mg mL⁻¹. The corresponding raw data are provided in **Table S1a** and **S1b**.

Table S1 Original data of **Fig. S1(a)** (Intraday precision)

Replicate	ΔI		
	0.4 mg L⁻¹	0.6 mg L⁻¹	0.8 mg L⁻¹
1	13.88	18.64	22.22
2	12.87	18.65	22.31
3	12.56	18.32	22.50
4	12.74	17.64	21.96
5	13.52	18.36	22.20
6	12.70	18.54	22.09
7	13.13	18.96	22.59
8	12.84	18.31	22.33
9	11.80	18.65	22.00
10	12.43	17.88	21.88
Average	12.85	18.39	22.21
SD	0.58	0.39	0.23
%RSD	4.48	2.13	1.04

Table S2 Original data of **Fig. S1(b)** (Interday precision)

Day	ΔI		
	0.4 mg L⁻¹	0.6 mg L⁻¹	0.8 mg L⁻¹
1	12.67	18.78	22.22
2	13.01	18.00	23.11
3	12.56	18.67	22.0
Average	12.75	18.48	22.44
SD	0.23	0.42	0.59
%RSD	1.84	2.28	2.62

Table S3 Original data for determination of CRP in human serum (Section 3.4)

Replicate	ΔI	CRP (mg L ⁻¹)
1	21.96	40.66
2	22.50	42.04
3	22.53	42.10
4	23.08	43.52
5	2.35	41.66
6	22.13	41.08
7	21.99	40.74
	Average	41.7
	SD	1.0
	%RSD	2.4

Table S4 Statistical analysis (t-test) for comparison between the obtained value and the true value.

t-test: Paired Two Sample for Means		
	Variable 1	Variable 2
Mean	41.7	41.2
Variance	0.997665	5.89×10^{-29}
Observations	7	7
Pearson Correlation	6.59×10^{-15}	
Hypothesized Mean Difference	0	
df	6	
t stat	1.291586	
P(T<=t) one-tail	0.12201	
t Critical one-tail	1.94318	
P(<=t) two-tail	0.244021	
t Critical two-tail	2.446912	