

Supporting Information

Thermosensitive molecularly imprinted core-shell CdTe quantum dots as a ratiometric fluorescence nanosensor for phycoerythrin recognition and detection in seawater

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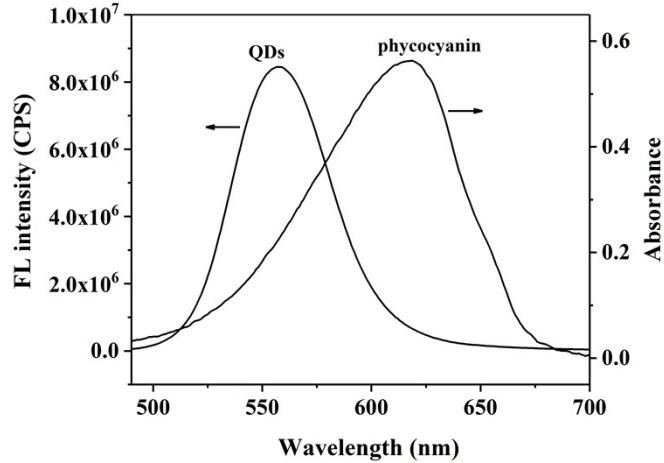


Fig. S1 Fluorescence emission spectrum of QDs and absorption spectrum of phycocyanin.

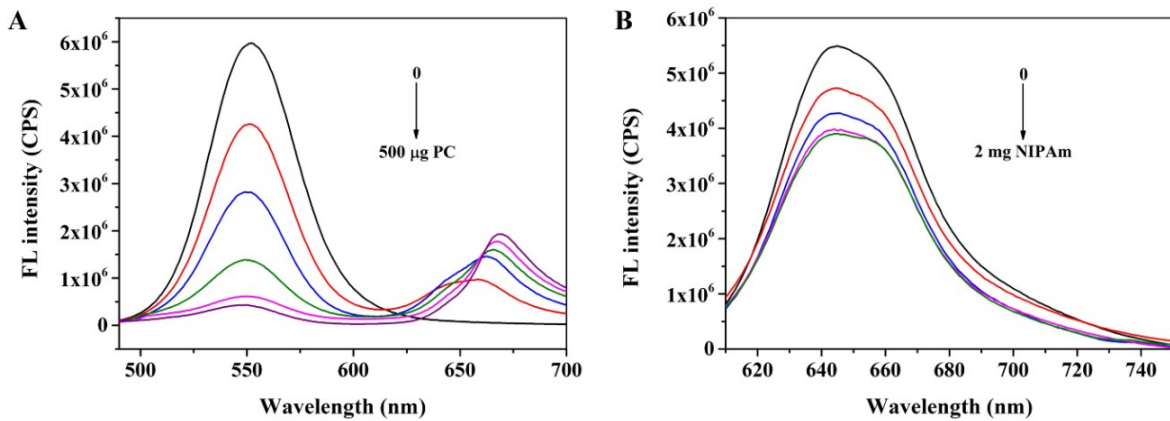


Fig. S2 (A) Fluorescence quenching results of adding 400 μg QDs into various amounts of phycocyanin of 0, 100, 200, 300, 400 and 500 μg (20 $^{\circ}\text{C}$, ex: 468 nm); (B) fluorescence spectra of phycocyanin-NIPAM complex with different amounts of NIPAM of 0, 0.5, 1.0, 1.5 and 2.0 mg, with a fixed phycocyanin amount of 400 μg (20 $^{\circ}\text{C}$, ex: 590 nm).

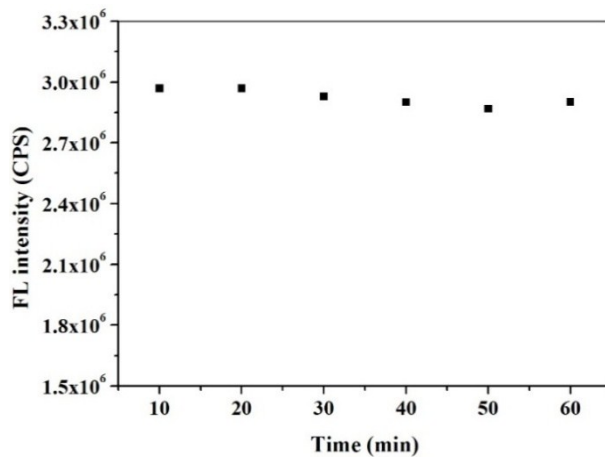


Fig. S3 Fluorescence intensity change of MIPs sensor within 60 min.

Table S1 The influence of different eluent for the MIPs sensor construction.

Eluents	Results
Tris (0.5%)	Low fluorescence intensity after elution
NaOH (1M)	Hard for centrifugation, low MIPs yield
SDS (0.5%, w/v)–AcOH ^a (0.5%, v/v)	Hard for centrifugation, few MIPs yield
MT ^b –NaOH (1M) (1: 1, v/v)	Hard for MIPs dispersion, low MIPs yield
MT–AcOH (9: 1, v/v)	No obvious fluorescence peak after elution
EA ^c –HCl (8:2, v/v)	No obvious fluorescence peak after elution
EA–NaOH (1M) (5: 1, v/v)	Obvious fluorescence peak of MIPs after elution, easy dispersion and centrifugation for MIPs, high MIPs yield

a: acetic acid; *b*: methyl alcohol; *c*: ethyl alcohol

Table S2 Results for the determination of the phycocyanin in seawater samples by the constructed MIPs sensor.

Added (μM)	Found (μM)	Recovery \pm RSD (%, $n=5$)
0	0	–
0.25	0.230	92.0 \pm 4.8
0.50	0.534	106.8 \pm 5.5
0.75	0.759	101.2 \pm 3.1
1.00	0.983	98.3 \pm 2.9