

Fig. S1. The zeta potential of chitosan-capped ZnS QDs ($1.2 \times 10^{-6} \text{ mol}\cdot\text{L}^{-1}$) (A) and BPA ($300 \mu\text{g}\cdot\text{L}^{-1}$) (B). Both A and B were tested in 1% acetic aqueous solution.

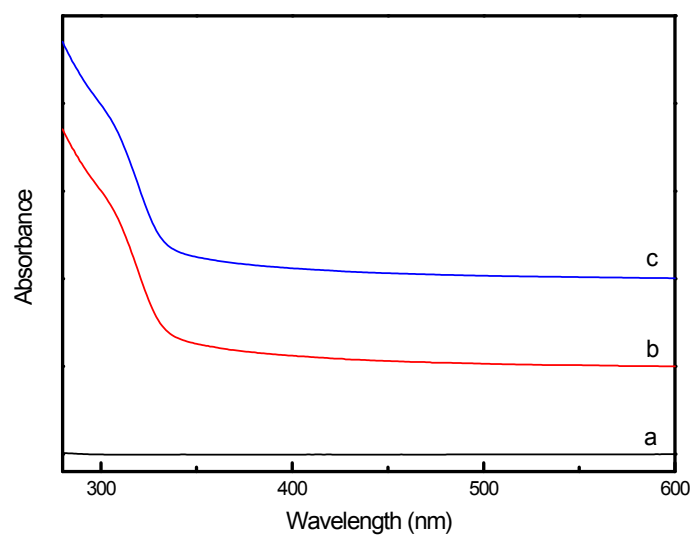


Fig. S2. UV-vis absorption spectra of BPA (a), ZnS QDs (b) and ZnS QDs + BPA (c). The concentrations of ZnS QDs and BPA were respectively $1.2 \times 10^{-6} \text{ mol}\cdot\text{L}^{-1}$ and $300 \mu\text{g}\cdot\text{L}^{-1}$.

Table S1 Peak assignments in FTIR spectra of pure chitosan and chitosan-capped ZnS QDs

Peak frequency (cm ⁻¹)		Peak assignments
Chitosan	Chitosan-capped ZnS QDs	
~3434	~3396	O—H and N—H stretching
2878	2878	C—H stretching
1653	1647	C=O stretching
1602	1611	N—H bending
1420	1424	O—H bending
1379	1380	C—H bending (acetyl)
1320	1332	C—N bending
1264	1261	C ₂ —H stretching
1157	1157	C—O—C stretching
1090	1083	C ₃ —O stretching
1035	1035	C ₆ —O stretching

Table S2 Comparison results of different methods for detection of BPA

Method	Apparatus	Pretreatment	LOD ($\mu\text{g}\cdot\text{L}^{-1}$)	Ref
HPLC	HPLC-DAD	Liquid-phase microextraction	0.20	Tan et al., 2012
LC/MS	CSLC/EMS	Column-switching/Semi-microcolumn	0.50	Motoyama et al., 1999
GC/MS	GC/MS	Solid-phase microextraction	0.01	Mudiam et al., 2011
ELISA	ELISA reader	Preparation of haptens and polyclonal antibodies	2.50	Lu et al., 2012
CE	CE/DAD	Cloud point extraction	0.50	Zhong et al., 2011
Electrochemical method	Electrochemical workstation	Electrode modification	1.83	Yu et al., 2011
Chemiluminescence method	Chemiluminescence analyzer	-	18.3	Lu et al., 2010
QCM	Quartz crystal microbalance	-	1.00	Li et al., 2004
Colorimetric method	UV-vis spectrometer	-	0.10	Mei et al., 2013
SPR biosensor	SPR analysis system	Antigen conjugation	0.08	Hegnerova et al., 2010
Liposome chromatography	Fluorescence spectrometer	Antigen conjugation	0.10	Liu et al., 2006
Fluorescence method	Fluorescence spectrometer	-	2.00	Fan et al., 2007
Fluorescence method	Fluorescence spectrometer	-	0.23	Kuang et al., 2010
Fluorescence method	Fluorescence spectrometer	-	0.08	This work

Notes: DAD, diode-array detector; CSLC/EMS, column-switching semi-microcolumn liquid chromatography/electrospray mass spectrometry.

Table S3 Interference of coexisting substances on the fluorescence intensity of chitosan-capped ZnS QDs with BPA

Substances	Tolerance ratios	Changes of fluorescence intensity (%)	Substances	Tolerance ratios	Changes of fluorescence intensity (%)
K ⁺	1000	+3.1	NO ₃ ⁻	1000	+2.0
Na ⁺	1000	+1.8	Cl ⁻	1000	-1.9
Al ³⁺	1000	+3.9	Mn ²⁺	600	-4.5
Ca ²⁺	1000	+2.6	Zn ²⁺	100	+4.7
Ba ²⁺	1000	+4.4	Fe ³⁺	20	-4.0
NH ₄ ⁺	1000	+3.5	Cu ²⁺	5	-4.4
Mg ²⁺	1000	+4.3	Hg ²⁺	5	-4.1
CO ₃ ²⁻	1000	-3.1	Ag ⁺	50	-4.6
SO ₄ ²⁻	1000	+2.4	glucose	500	+4.9
PO ₄ ³⁻	1000	-3.7	lactose	500	+4.2
CH ₃ COO ⁻	1000	+1.5	glycine	700	+4.1

Notes: BPA, 25.0 µg·L⁻¹; ZnS QDs, 1.2 × 10⁻⁶ mol·L⁻¹.