Electronic Supplementary Material (ESI) for Analyst.

Supporting Information

A Fluorescent Color Card for Point-of-care Testing (POCT) and Its Application in Simultaneous Detection

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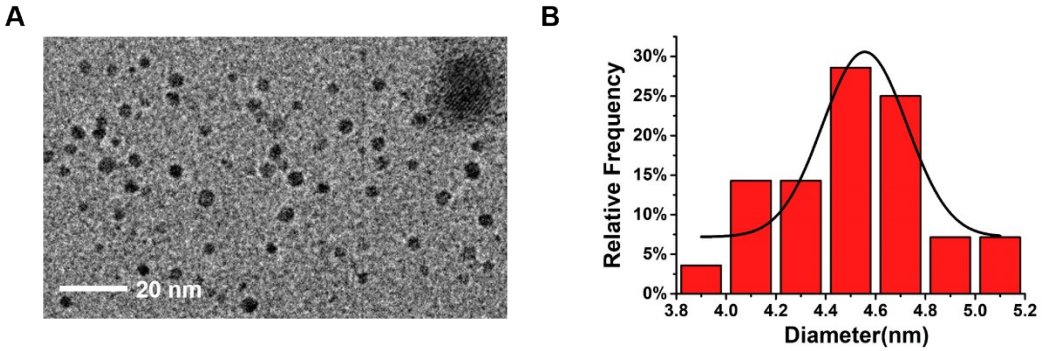

Figure S1 (A) TEM image of the CdZnTeS QDs. (B) Statistical graph of particle size distribution of CdZnTeS QDs.

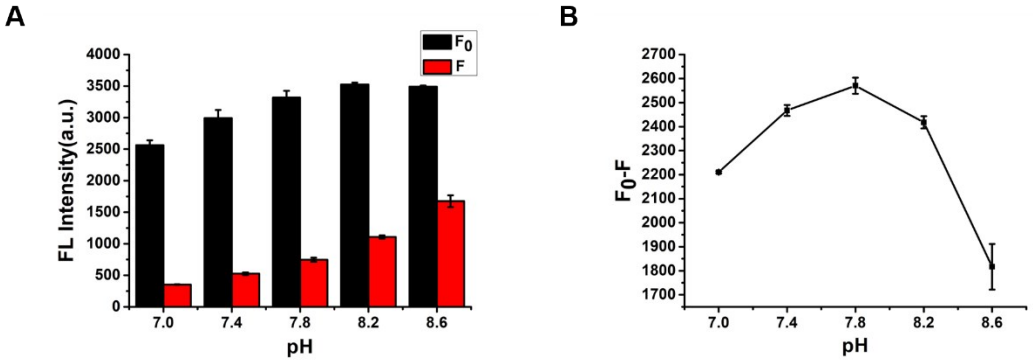

Figure S2 (A) The histogram by plotting the fluorescence intensity of CdZnTeS QDs before and after reaction with glucose (500 μmol/L) versus different pH. (B) The point plot by plotting the decrease of fluorescence intensity versus different pH. GOx: 0.5 U/mL. The error bars were acquired by three repetitive experiments. Excitation wavelength: 340 nm.

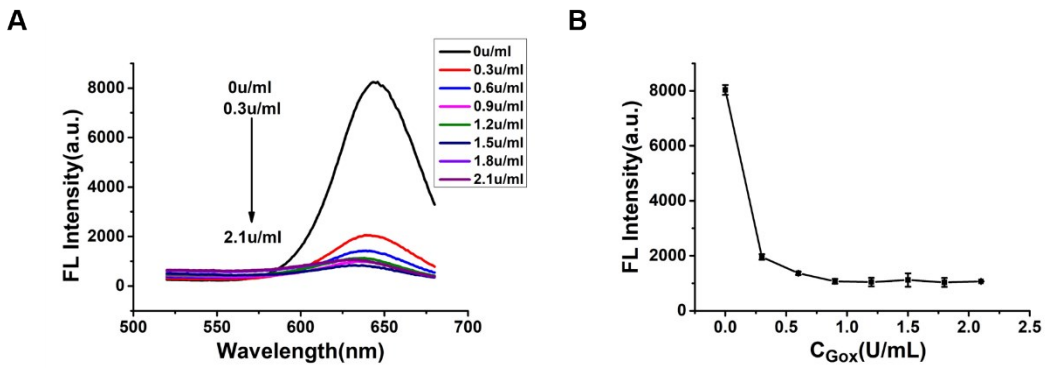

Figure S3 (A) Fluorescence spectra of different concentrations of GOx (0.3 - 2.1 U/mL) addition to the mixed solution of CdZnTeS QDs and glucose. (B) The point plot of the fluorescence intensity versus different concentrations of GOx (0.3 - 2.1 U/mL). The error bars were acquired by three repetitive experiments. CdZnTeS QDs: 4.9 nmol/L. Glucose: 500 μmol/L. Excitation wavelength: 340 nm.

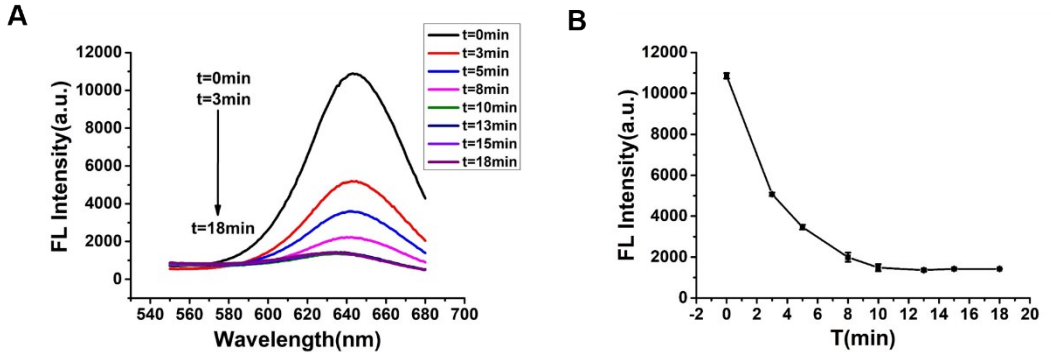

Figure S4 (A) Fluorescence spectra of the mixed solution of CdZnTeS QDs and GOx for the detection of glucose within 0 - 16 min. (B) The point plot by plotting the fluorescence intensity versus reaction time. The error bars were acquired by three repetitive experiments. CdZnTeS QDs: GOx=4.9 nmol/L: 0.9 U/mL. Glucose: 500 μmol/L. Excitation wavelength: 340 nm.

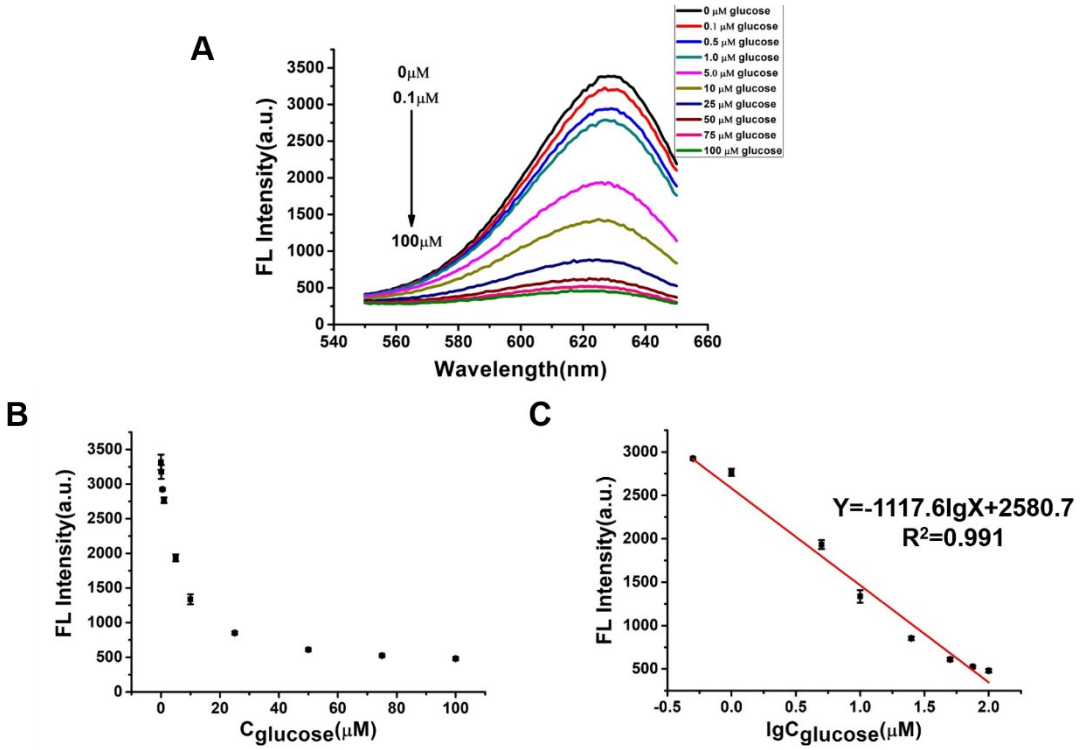

Figure S5 (A) Fluorescence spectra of different concentrations of glucose (0.1 - 100 μmol/L) addition to the mixed solution of CdZnTeS QDs and GOx. (B) The dot plot of the fluorescence intensity versus glucose concentration. (C) Calibration curve for glucose detection. The error bars were acquired by three repetitive experiments. CdZnTeS QDs: GOx=4.9 nmol/L: 0.9 U/mL.

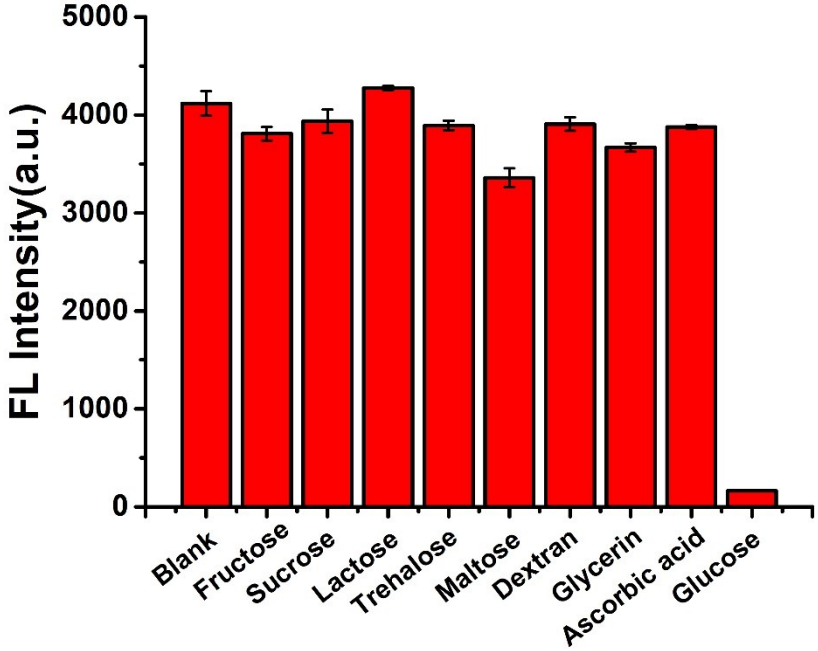

Figure S6 The histogram by plotting the fluorescence intensity of the CdZnTeS QD solution versus different saccharides, glycerin and ascorbic acid (500 μmol/L each). The error bars represent the standard deviations of three repetitive experiments. Excitation wavelength: 340 nm.

Table S1 Comparison of the primary screen results of diabetes in this work with

clinic inspection of the Zhongnan Hospital.

Clinic samples (urine)	This method	Clinic results	Clinic samples (urine)	This method	Clinic results
1	*	*	2	*	*
3	+	+	4	*	*
5	*	*	6	+	+
7	+	*			

"*" expresses a healthy people and "+" expresses a patient with diabetes.

Table S2 Comparison of the primary screen results of diabetes in this work with

clinic inspection of the Zhongnan Hospital.

Clinic samples (serum)	This method	Clinic results	Clinic samples (serum)	This method	Clinic results
1	*	*	2	*	+
3	*	*	4	+	+
5	*	*	6	*	*
7	*	*	8	*	*
9	*	*	10	+	+
11	*	*	12	*	*
13	*	*	14	+	+
15	*	*	16	*	*
17	*	*	18	*	*
19	*	*	20	*	*
21	*	*	22	+	*
23	*	*	24	*	*
25	*	*	26	*	*
27	*	+	28	+	+
29	*	*	30	*	*

"*" expresses a healthy people and "+" expresses a patient with diabetes.

Table S3 Comparison of the primary screen results of diabetes and hyperuricemia in

this work with clinic inspection of the Zhongnan Hospital.

Clinic samples (urine)	**This method（GLU）**	**Clinic results（GLU）**	**Clinic samples (urine)**	**This method（UA）**	**Clinic results（UA）**
1	*	*	1	*	*
2	*	*	2	*	*
3	+	+	3	+	+
4	*	*	4	*	*
5	*	*	5	*	*
6	+	+	6	*	*
7	+	*	7	+	+

"*" expresses a healthy people and "+" expresses a patient with diabetes or hyperuricemia.

Table S4 Comparison of material-based detection methods for glucose detection

Material	Method	Linear range (μM)	LOD (μM)	Reference
polymer QD-enzyme hybrids	fluorescence	5 - 600	5.0	[1]
glucose enzymatic electrode	electrochemical	100 - 1400	40.0	[2]
PB-Au@MoS_2 NFs	colorimetric	0 - 120	3.0	[3]
3D cloth-based GOD electrochemical chip	electrochemical	50 - 1000	50.0	[4]
Glucose oxidase-mediated sodium alginate gelation	visual distance-readout method	1400 - 7000	1400.0	[5]
$NiCo_2S_4$ microflowers	colorimetric	20 - 1000	8.3	[6]
Alg@QDs-GOx MSs	fluorescence	100 - 1000	1.1	This work

References

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