SUPPLEMENTARY INFORMATION

Visual fluorescent detection of H_2O_2 and glucose based on "molecular beacon"-hosted Hoechst dyes

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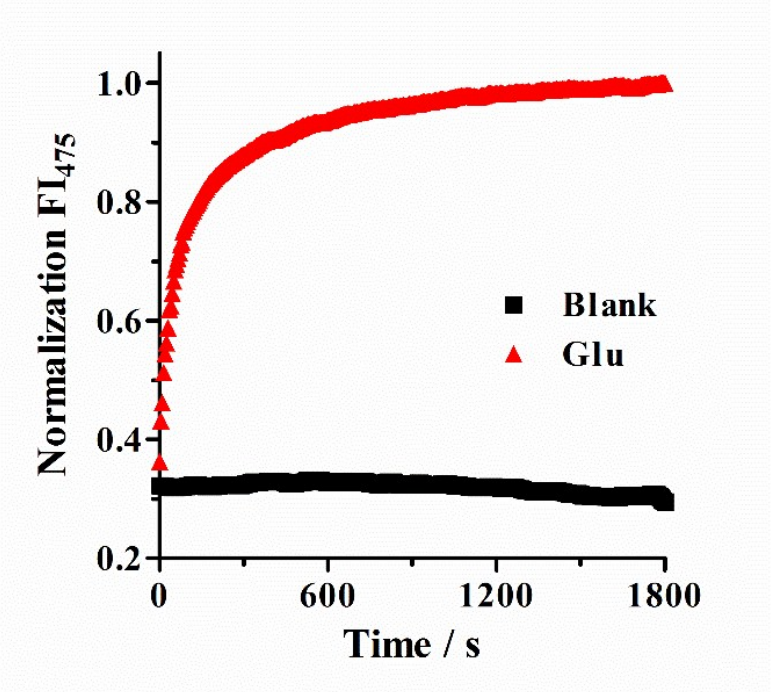

Fig. S1 Kinetics investigation of fluorescent response of the Hg^{2+}/ATprobe/Hoechst-Cys-GOx system toward glucose at a fixed concentration of 100 μM.

Table S1. The analytical performance of various glucose sensors.

Sensing materials	Signal output	LOD (μM)	Linear range (μM)	Ref.
AuNP	Colorimetry	1	0-131	1
GQDs	Colorimetry	0.5	0.5-1000	2
rGO/AgNPs	Electrochemistry	4.5	32-1890	3
GQDs/CCE	Electrochemistry	1.73	5-1270	4
Si-QDs	Fluorimetry	0.68	5-650	5
C-Dots	Fluorimetry	1.5	9-900	6
AgNPs-DNA@GQDs	Fluorimetry	0.42	2-100	7
GQDs	Fluorimetry	30	100-10000	8
Hg^{2+}/ATprobe/Hoechst-Cys-GOx	Fluorimetry	0.1	0-10	This work

Analysis of glucose in artificial saliva samples

The glucose concentration in saliva has been found to be in a micromole range from 8 to 210 μM.[9] Artificial saliva samples were prepared according to the reported method.[10] Artificial saliva consisted of the following components added to 50 mL water: 48 mg sodium chloride, 28 mg sodium phosphate dibasic, 28 mg monopotassium phosphate, 25 mg magnesium chloride, 124 mg potassium bicarbonate, 18 mg calcium chloride and 39 mg citric acid. The pH of the solution was subsequently adjusted to 6.7.

Table S2. Determination results of glucose in spiked saliva samples (n = 3).

Saliva sample	Glucose found (μM)	Glucose spiking (μM)	Total found (μM)	Recovery (%)	RSD (%)
1	ND[a]	10.00	10.13	101.30	3.23
2	ND	50.00	48.84	97.68	1.35
3	ND	100.00	100.19	100.19	1.74

a) Not detected.

Analysis of glucose in artificial urine samples

An artificial urine solution was prepared according to the recipe reported by Brooks and Keevil.[11] The artificial urine solution contained 170 mM urea, 25 mM sodium bicarbonate, 1.1 mM lactic acid, 2.0 mM citric acid, 2.5 mM calcium chloride, 90 mM sodium chloride, 2.0 mM magnesium sulfate, 10 mM sodium sulfate, 7.0 mM potassium dihydrogen phosphate, 7.0 mM dipotassium hydrogen phosphate, and 25 mM ammonium chloride and all mixed in Milli-Q water, and the pH of the solution was adjusted to 6.0 by the addition of 1.0 M hydrochloric acid.

Table S3. Determination results of glucose in spiked urine samples (n = 3).

Urine sample	Glucose found (μM)	Glucose spiking (μM)	Total found (μM)	Recovery (%)	RSD (%)
1	ND[a]	10.00	10.34	103.40	0.93
2	ND	50.00	54.62	109.20	2.43
3	ND	100.00	100.72	100.70	1.16

a) Not detected.

Reference:

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