Electronic Supporting Information

Yolk-shell nanostructured Fe$_3$O$_4$@C magnetic nanoparticles with enhanced peroxidase-like activity for label-free colorimetric detection of H$_2$O$_2$ and glucose

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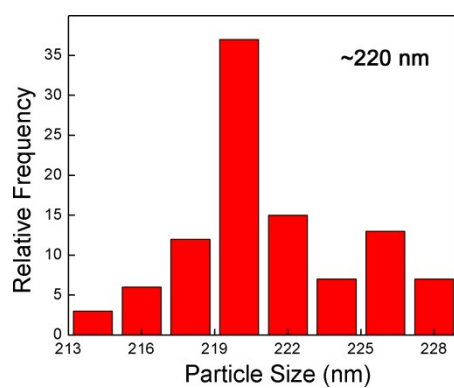
Figure S1. Distribution of the particle size of a batch of Fe_3O_4@C YSNs.

Table S1. Magnetic properties of bare Fe_3O_4 MNPs and Fe_3O_4@C YSNs.

Samples	Particle Size (nm)	Hc (Oe)	Mr (emu g^{-1})	Ms (emu g^{-1})
Fe_3O_4 MNPs	100-150	58	5	36
Fe_3O_4@C YSNs	220-250	63	3	30

Table S2. Summary of glucose sensors based on different peroxidase mimetics.

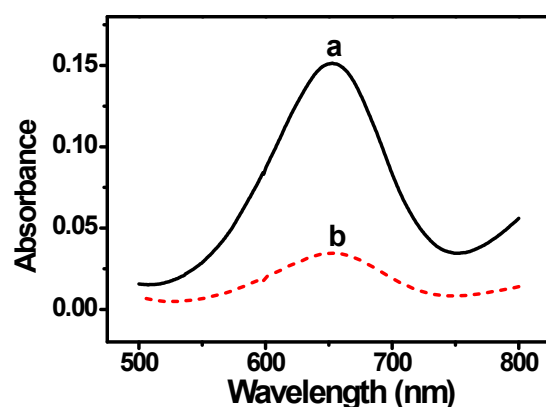|	Nanozyme	Linear range	Detection Limit (μM)	Ref
1	Fe_3O_4	0.05-1 mM	30	1
2	Positively-charged gold NPs	18-1100 μM	4.0	2
3	Au@Ag nanorods	0.05-20 mM	39	3
4	Janus hematite-silica NPs	0-20 μM	3.2	4
5	DNA/CuAl-LDH nanohybrids	40-200 μM	8.0	5
6	CeO_2/NT-TiO_2@0.1 nanocomposites	10-500 μM	6.1	6
7	Fe_3O_4@C YSNs	1-10 μM	1.12	This work

Figure S2. UV-Vis spectra of different solutions in the absence (a) or presence (b) of the human serum sample based on our biomimetic sensor.

Notes and references

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