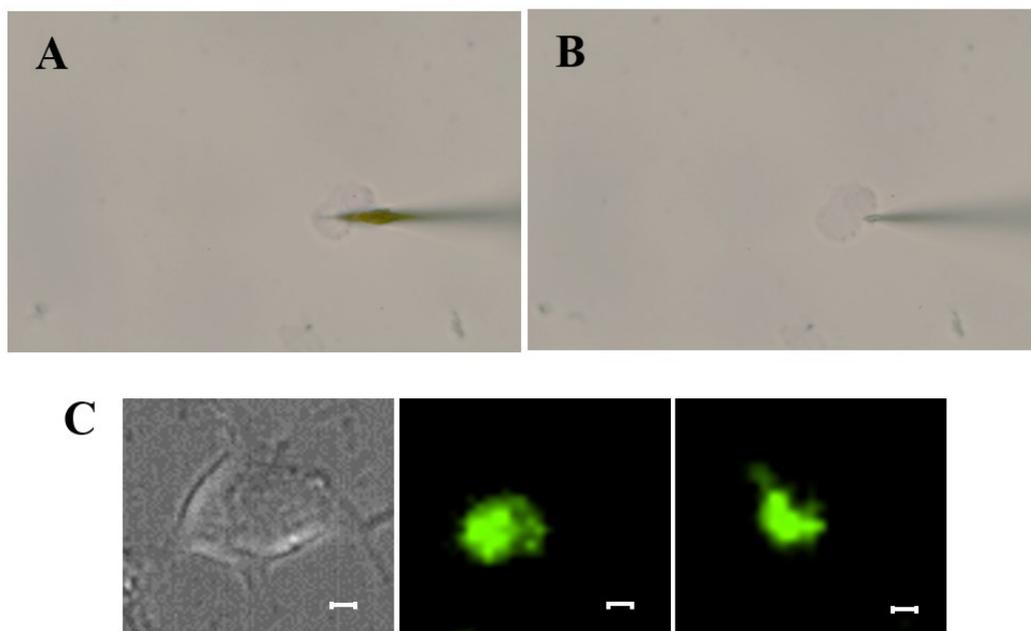


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Supplemental Information

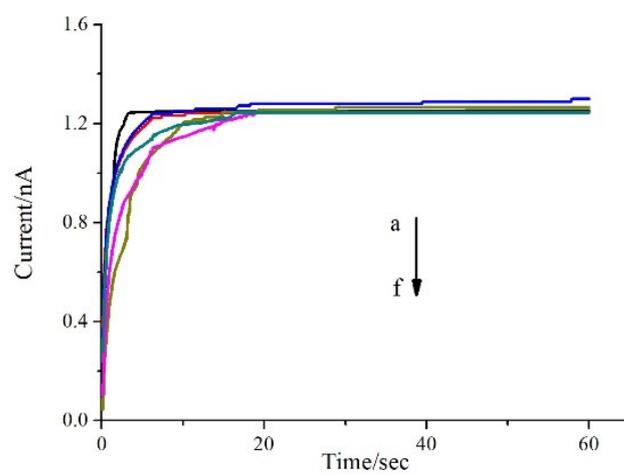
Highly Sensitive Real-time Detection of Intracellular Oxidative Stress and Application in
Mycotoxin Toxicity Evaluation Based on Living Single-cell Electrochemical Sensor

Lu Gao, Jiadi Sun*, Liping Wang, Qigao Fan, Gaowen Zhu, Hongyan Guo, Xiulan Sun*



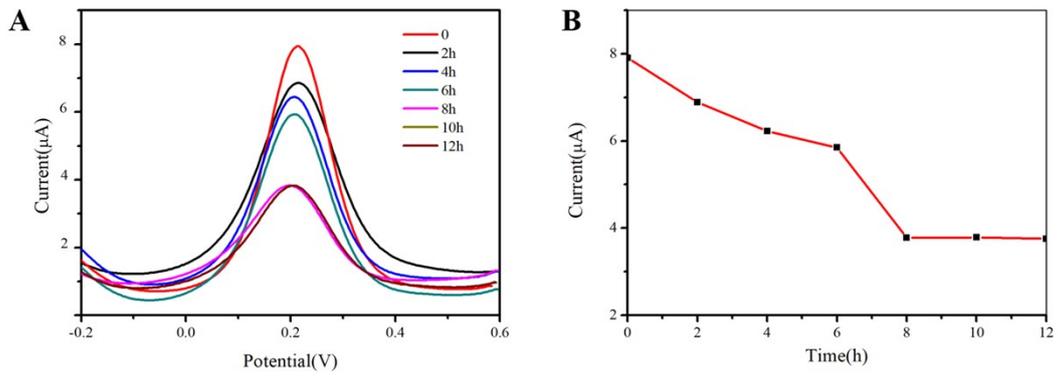
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Fig. S1 Optical micrographs of PB-modified nanoprobe inserted into HepG2 cells (A) and pulled out (B). C. Fluorescence imaging of cells before and after probe insertion is shown in the middle and right figures respectively, with a scale of 5 μm .



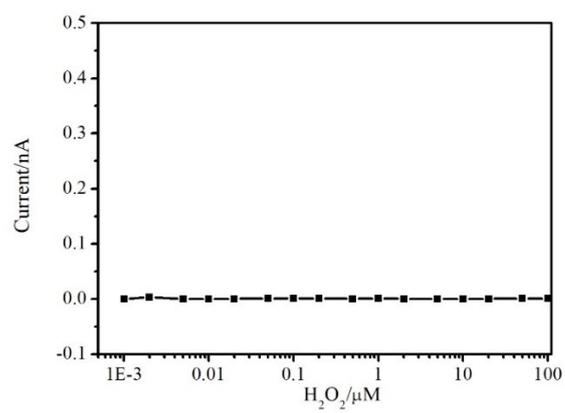
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Fig. S2 Chronoamperograms of nanoelectrodes in 10 μM H₂O₂ (a-f stand for six different electrodes).



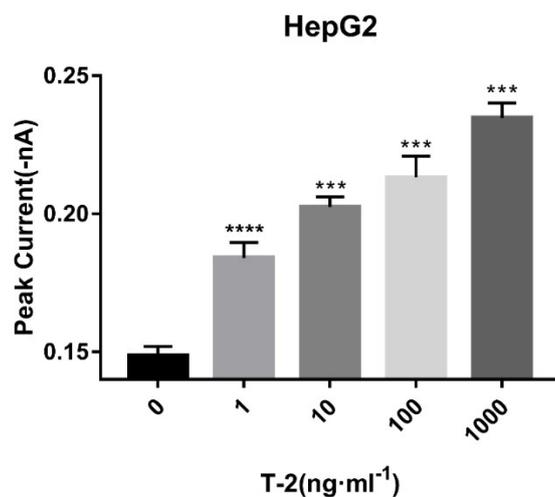
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Fig. S3 DPV curve (A) and current-time graph (B) of incubation time of GelMA/AuNP/GCE multicellular electrochemical sensor cells.

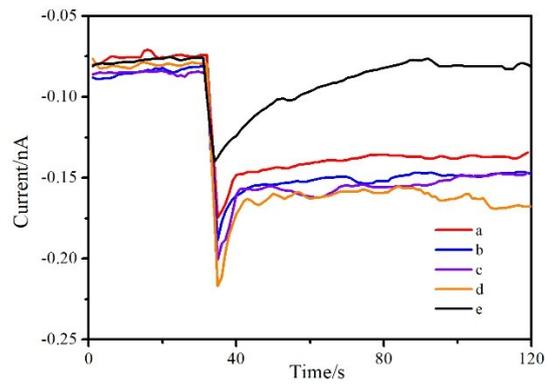


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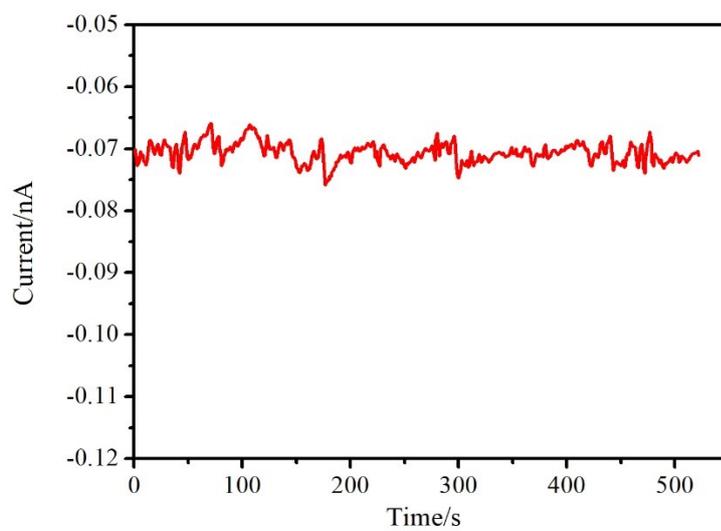
Fig. S4 Calibration curve of unmodified nanoprobe for H₂O₂ solution.



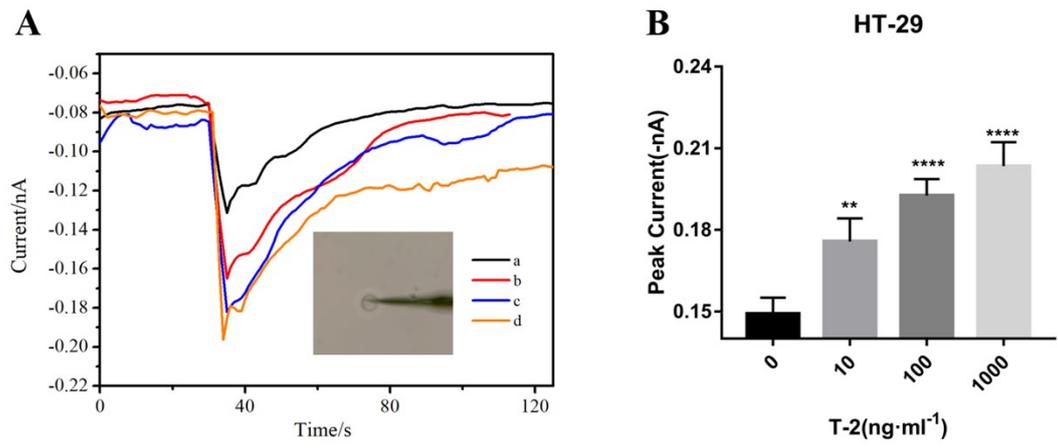
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 2 Fig. S5 Peak current of HepG2 single-cell sensor detects T-2 toxin (n=10).Significance tested with
 3 a one-way ANOVA and Tukey post-test. $p < 0.05 = *$, $p < 0.005 = **$, $p < 0.001 = ***$, $p < 0.0001 = ****$,
 4 the same below.
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2 Fig. S6 Real-time chronoamperogram of T-2 toxin at spiked concentrations of a.1 ppb, b.10 ppb,
3 c.100 ppb, d.1 ppm, e.0 ppb (nanoprobe penetrated into cells at 35 s).
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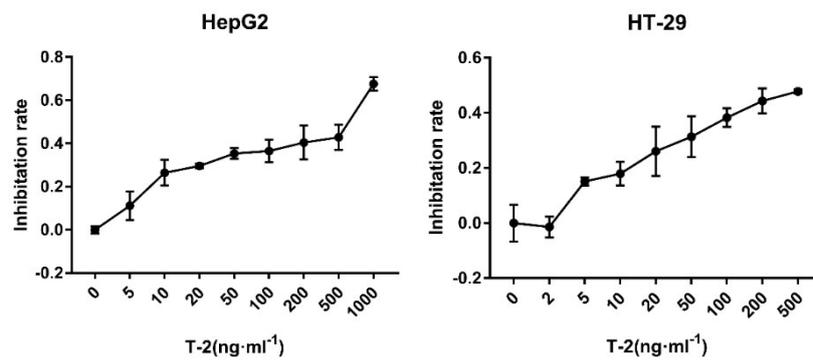
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- 2 Fig. S7 Real-time chronoamperograms of PB-modified gold nanoprobe in distant cells (air,blank).
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Fig. S8 A. Real-time chronoamperogram of a. 10 ppb, b. 100 ppb, c.1 ppm, d. 0 ppb (control group) T-2 toxin stimulated cell (nanoprobe penetrated into cell at 35s), the inset is an optical micrograph of nanoprobe penetrated into HT-29 cell. B. Peak current of T-2 toxin detection by HT-29 single-cell sensor (n=4)

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3 Fig. S9 The effect of T-2 toxin on the growth inhibition rate of HepG2 cells and HT-29 cells was
4 detected by CCK-8 assay.

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