

Supporting Information

Graphene oxide nanosensor enables co-delivery of aptamer and peptide probes for fluorescence imaging of cascade reaction in apoptotic signaling

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Fig. S1 Fluorescence responses of 50 nM Cy5-aptamer to GO-peptide conjugate of varying concentrations.

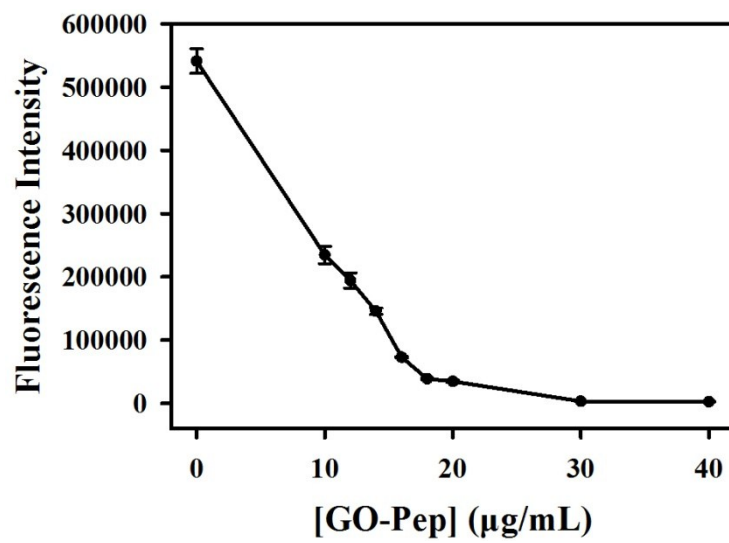


Fig. S2 FT-IR spectra of GO derivatives. 1) GO, 2) carboxylated GO, 3) GO-peptide conjugate, and 4) GO-peptide-aptamer nanoassembly.

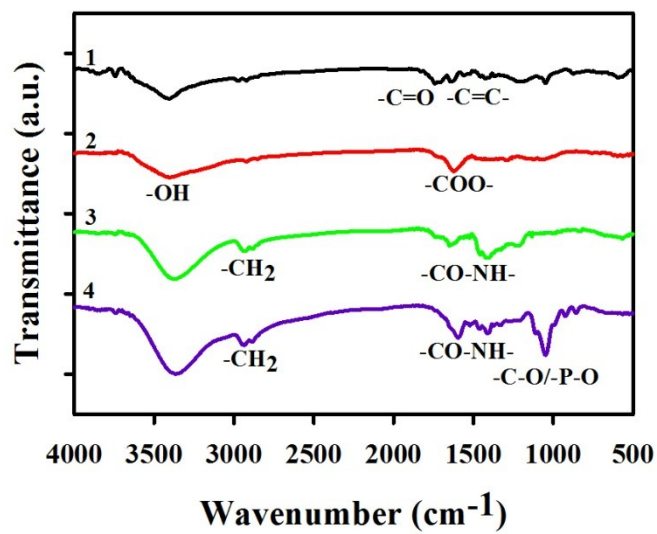


Fig. S3 Fluorescence intensities for 15 $\mu\text{g/mL}$ GO-peptide conjugate (a) and peptide adsorbed on the 15 $\mu\text{g/mL}$ GO (b) in titration with varying BSA concentrations.

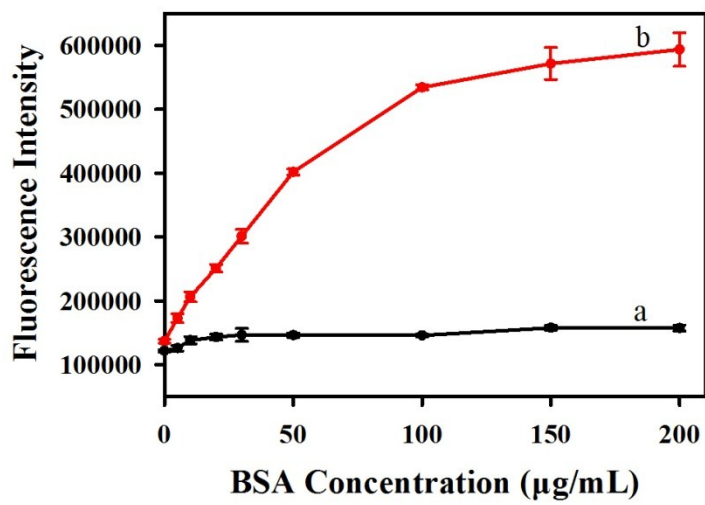


Fig. S4 Time-dependent fluorescence responses of GO-peptide-aptamer nanosensor to (a) 10 μ M Cyt c at 664 nm and (b) 450 ng/mL caspase-3 at 525 nm.

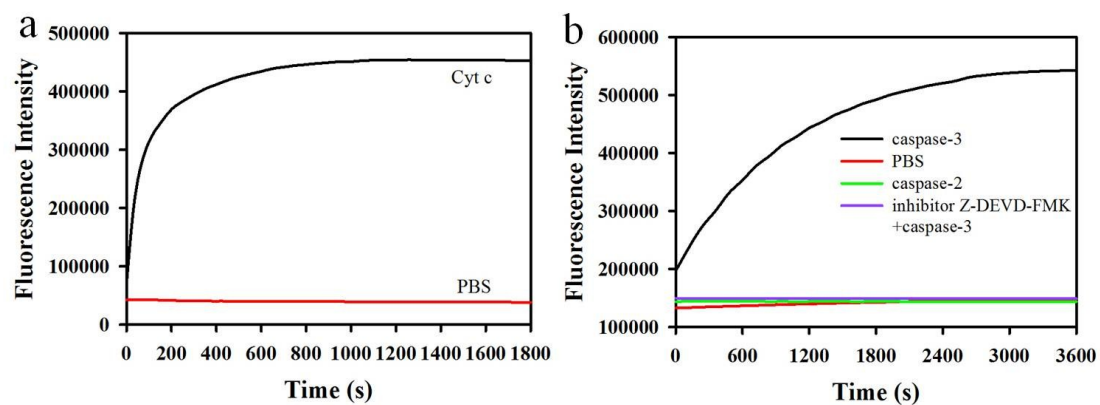


Fig. S5 CCK-8 assay of cytotoxicity. The nanosensor was incubated with Hela cells for 8 h at different concentrations (0, 50, 100, 150, 200 $\mu\text{g/mL}$).

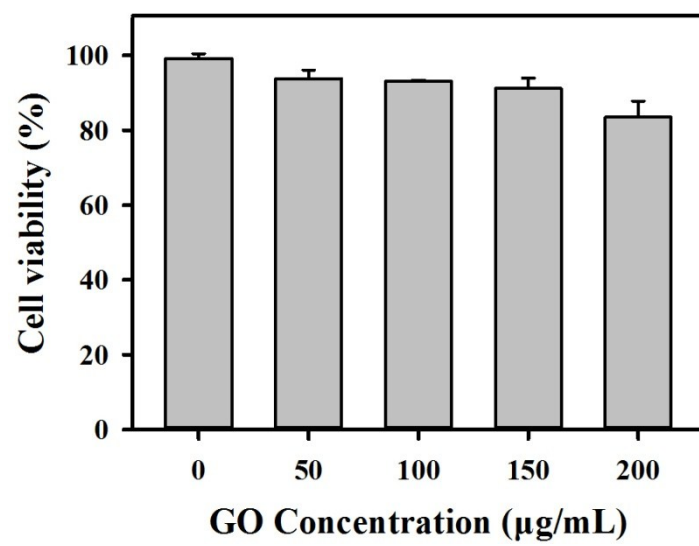


Fig. S6 Fluorescence images for localization analysis of GO-PEG-FAM conjugation in HeLa cells. (a) Cell incubated with 15 $\mu\text{g}/\text{mL}$ nanoassembly for 3 h and 20 nM lysosome tracker (Lyso@tracker), (b) Cell incubated with 15 $\mu\text{g}/\text{mL}$ nanoassembly for 3 h and 20 nM mitochondria tracker (Mito@tracker).

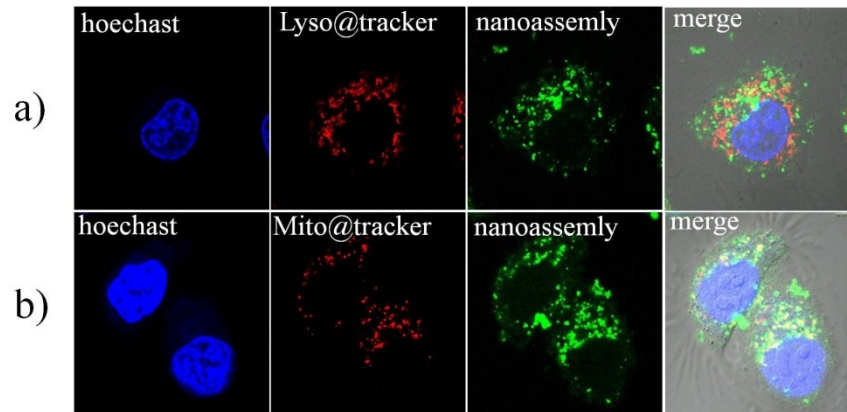


Fig. S7 Flow cytometric assay of HeLa cells (1), HeLa cells incubated with 15 $\mu\text{g/mL}$ nanosensor for 3 h (2), HeLa cells incubated with 15 $\mu\text{g/mL}$ nanosensor for 3 h followed by 0.5 μM STS for 1 h (3), HeLa cells pretreated with 100 μM pepstatin A for 24 h and incubated with 15 $\mu\text{g/mL}$ nanosensor for 3 h followed by 0.5 μM STS for 1 h (4), HeLa cells pretreated with 100 μM Z-DEVD-FMK inhibitor for 1 h and incubated with 15 $\mu\text{g/mL}$ nanosensor followed by 0.5 μM STS for 1 h (5). (a) FAM fluorescence channel; (b) Cy5 fluorescence channel.

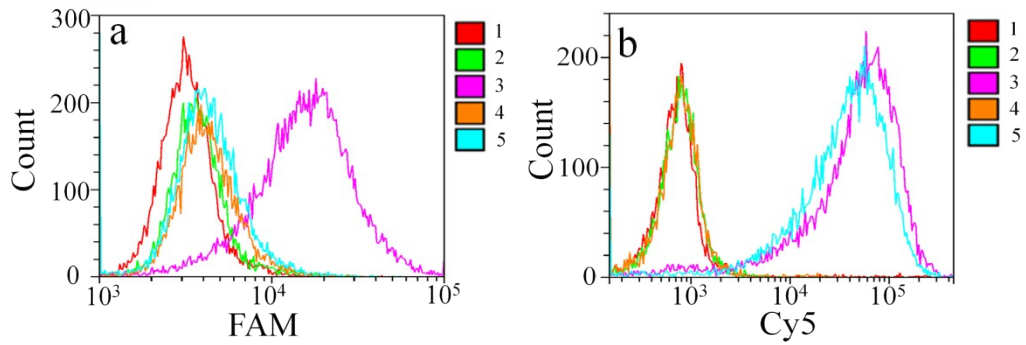


Fig. S8 (a) Fluorescence imaging and (b) Flow cytometric assay of HeLa cells. The cells were incubated with 15 $\mu\text{g}/\text{mL}$ nanosensor for 3 h followed by treatment with 2 μM individual candidate compound (DMSO, sodium ascorbate, cisplatin, etoposide, STS and digitonin) for 1 h.

