**Supporting Information for**

# Highly sensitive detection of caspase-3 activity based on peptide-modified organic electrochemical transistors

*Ji Yu,[a,b] Anneng Yang,[b] Naixiang Wang,[b] Haifeng Ling,[b] Jiajun Song,[b] Xi Chen,[a] Yadong Lian,[a] Zhishan Zhang,[a] Feng Yan,[b,]* and Min Gu[a,]**

[a]National Laboratory of Solid State Microstructures and Department of Physics, Collaborative Innovation Center of Advanced Microstructures, Nanjing University, Nanjing 210093, P.R. China

[b]Department of Applied Physics, the Hong Kong Polytechnic University Hung Hom, Kowloon, Hong Kong

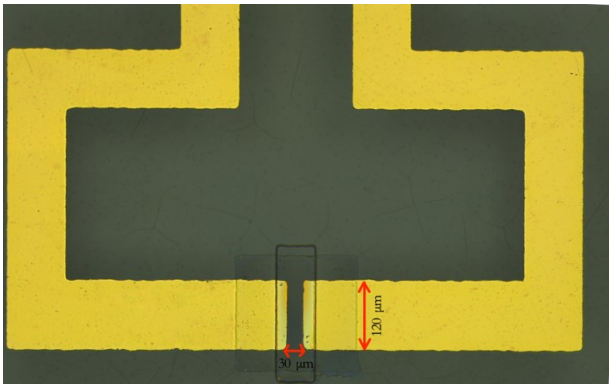


**Fig. S1** The channel of the sensor.

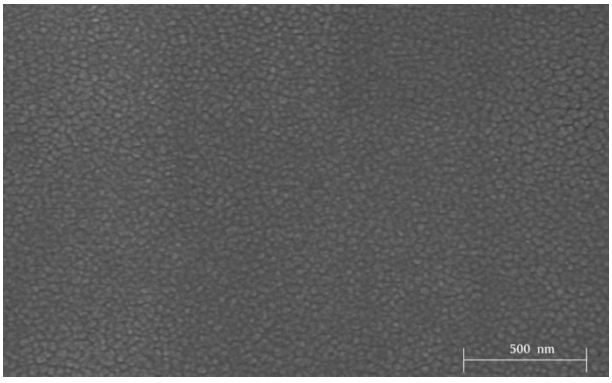


**Fig. S2** Nano-Au particles were electro-deposited on the surface of an Au electrode with a 30 s deposition time.

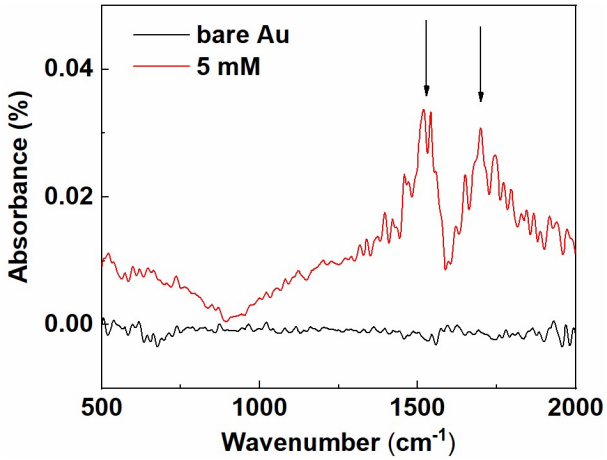


**Fig. S3** ATR-FTIR spectra.

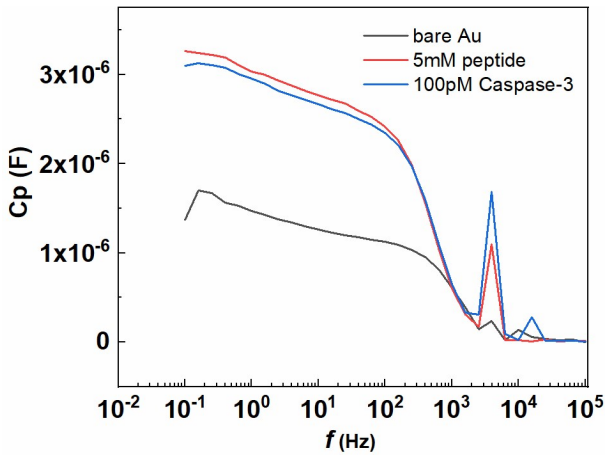


**Fig. S4** Capacitance for GE in PBS solution. Results were recorded at bare Au electrode, after immobilization of peptide, after cleaved by caspase-3. Applied potential: -0.2 V (vs. Ag/AgCl), with a 10 mV a.c. voltage. Frequency range: $10^{-1}$ Hz–$10^{5}$ Hz.

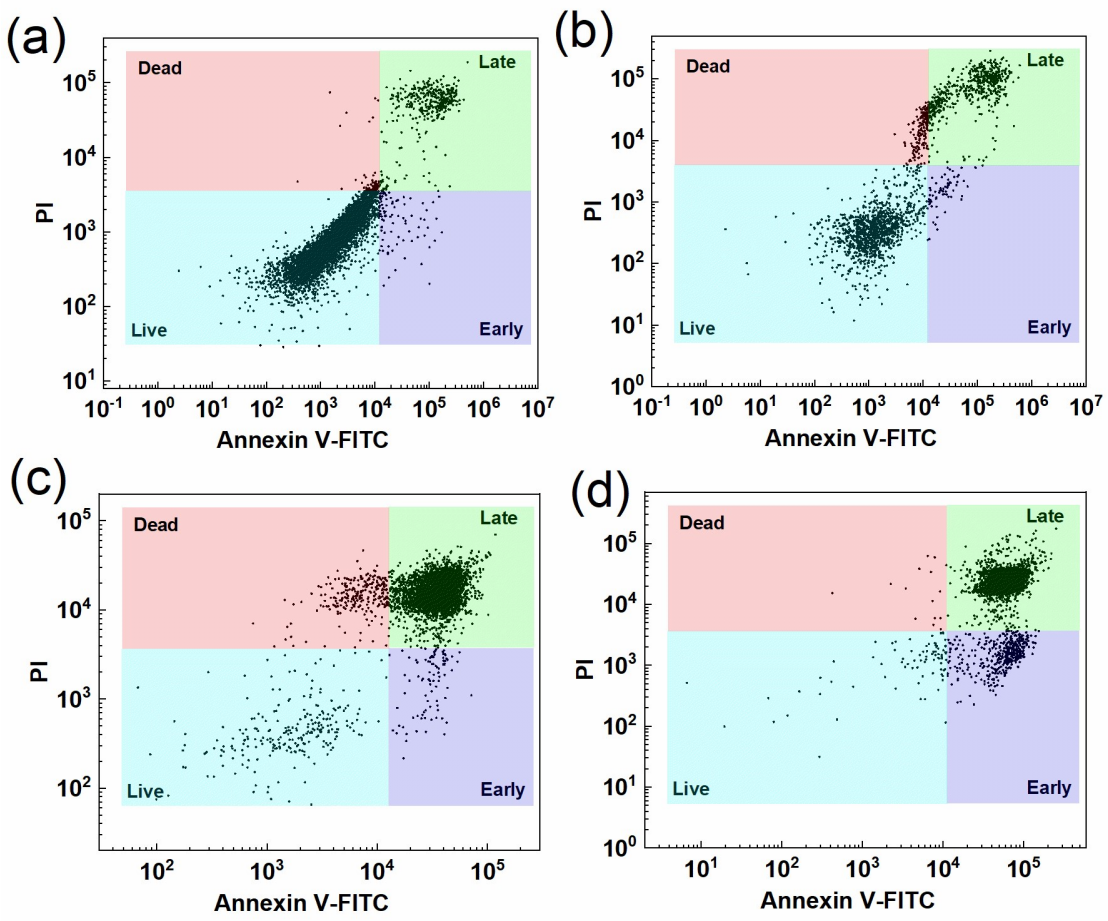


**Fig. S5** Flow cytometry of HeLa cells after treatment with different volumes of apoptosis inducer (a) 0 μL (b) 0.1 μL (c) 0.5 μL and (d) 0.8 μL