Electronic Supplementary Material (ESI) for RSC Advances.

Detection of Phosphatidylserine in Plasma Membrane at Single Apoptotic Cells using Electrochemiluminescence

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EXPERIMENTAL SECTION

Chemical. MCF-7 cells were obtained from the Institute of Biochemistry and Cell Biology, Shanghai Institute for Biological Sciences of Chinese Academy of Science (Shanghai, China). PLD was obtained from Cayman Chemical (USA). All other chemicals were from Sigma-Aldrich, unless indicated otherwise. Buffer solutions were sterilized.

Cell culture and apoptosis. MCF 7 cells were seeded in DMEM/high glucose medium supplemented with 10% fetal bovine serum (FBS) and 1% antibiotics (penicillin/streptomycin), respectively. Cultures were maintained at 37 °C under a humidified atmosphere containing 5% CO_2. To induce cell apoptosis, the cells were cultured in 0.1 μg/mL doxorubicin at 37 °C for a certain time.

Luminescence detection. ITO electrode cultured with the cells was used as the working electrode for the detection of electrochemical generated luminescence. Ag/AgCl electrode was connected as a reference electrode. A potential from -1.0 to 1.0 V with a scan rate of 1 V/s was applied on ITO electrode in 10 mM PBS (pH 7.4) with 30 U PLD, 1 U LAAO and 200 μM L012 to record the luminescence. For single cell analysis, a 100 μm-sized pinhole was placed between ITO electrode and PMT so that only one cell was exposed to PMT for the analysis.

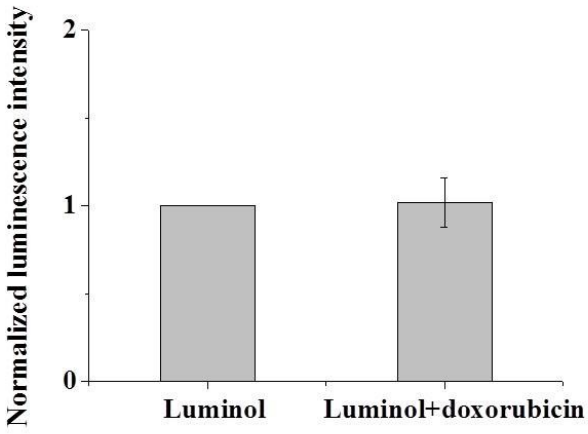

Figure S1. The normalized luminescence intensities from 200 μM luminol in the absence and presence of 0.1μg/mL doxorubicin. The error bar presented the relative standard deviation from three independent measurements.