Supporting Information

Electrochemiluminescence Imaging of Liposome Permeabilization by an Antimicrobial Peptide: Melittin

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A/ Parallel acquisition of ECL (top) and PL (below) images showing two successive permeation processes of a single liposome by melittin (10 µM).

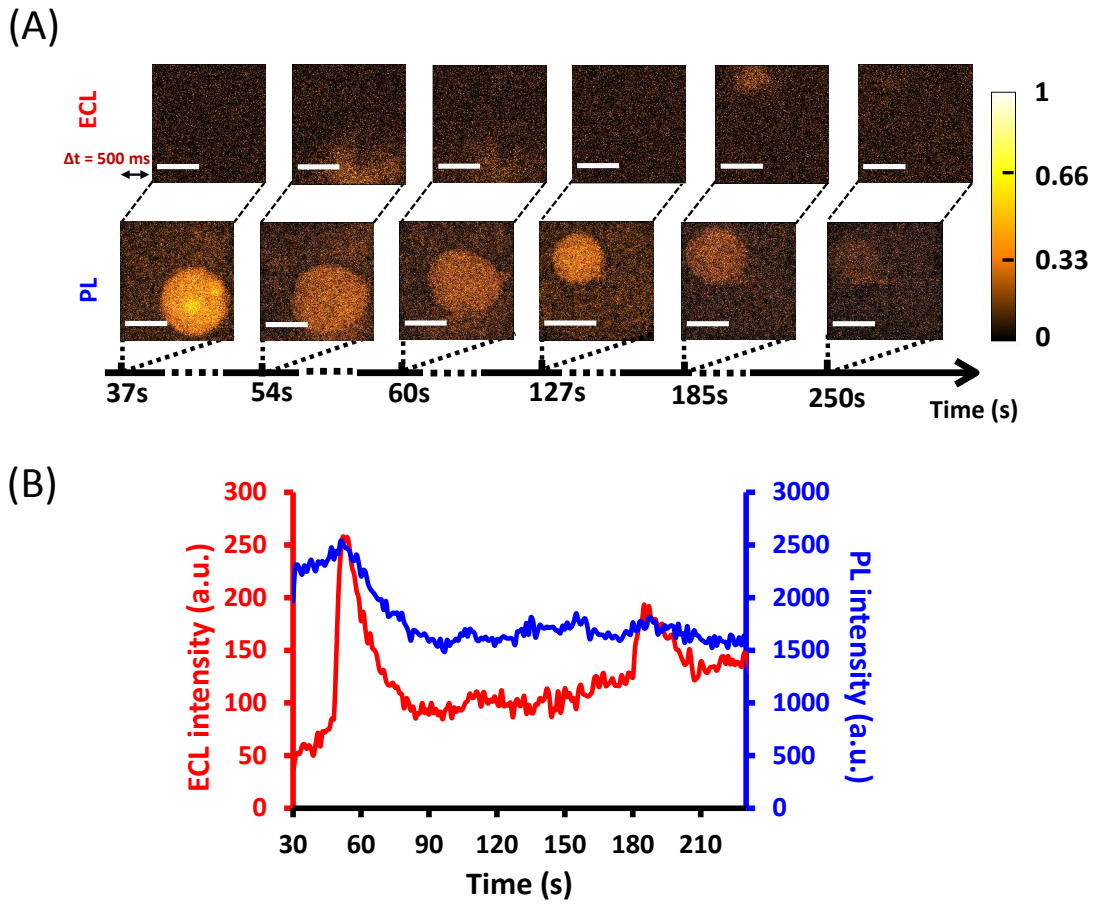

***Figure S1**. (A) Parallel time-lapse imaging by ECL (top) and PL (below) showing two successive permeation processes of a single liposome by 10 µM melittin. In this case, the ROI is the entire image. Scale bar: 100 µm. (B) Evolution of PL (blue curve) and ECL (red curve) intensity as a function of time for a single liposome [shown in (A)]. Same experimental conditions as in Figure 2.*

B/ Registration of both luminescent signals (ECL and PL)

Since both luminescent signals (ECL and PL) were registered with the same EMCCD camera all along the experiments, the diode (λ_{ex} = 455 nm) was set in a flashing mode to better distinguish between ECL and PL signals. The images were registered continuously with a 4 frame per second acquisition rate corresponding to 4 Hz frequency. For each second, the first frame (i.e., #1, #5, #9, etc…) was kept as a PL image whereas the third one (i.e., #3, #7, etc…) was selected as an ECL image. The two other frames (e.g. #2 and #4 in the first second) were not selected to avoid any PL pollution on ECL images. This also explains the acquisition time difference of 500 ms between PL and ECL images. Note that the electrochemical polarization of the ITO electrode was applied all along the experiment. Accordingly, ECL and PL images

could be recorded separately then reassembled to build two series of ECL and PL images as a function of time

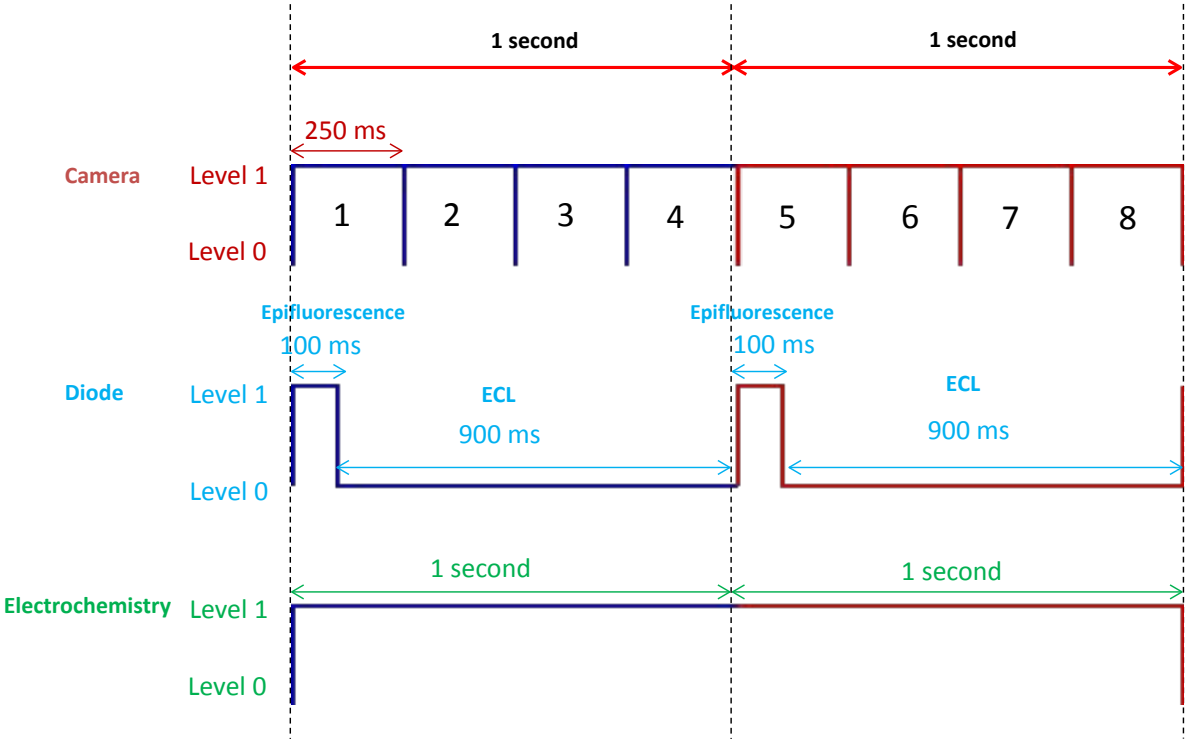

Figure S2. Appropriate time-sequences for the combined detection of amperometry-ECL-PL signals. Reprinted with permission from ref. 54. Copyright 2022 American Chemical Society.