Electronic Supplementary Material (ESI) for Lab on a Chip

Electrochemiluminescence analysis of folate receptors on cell membrane with on-chip bipolar electrode

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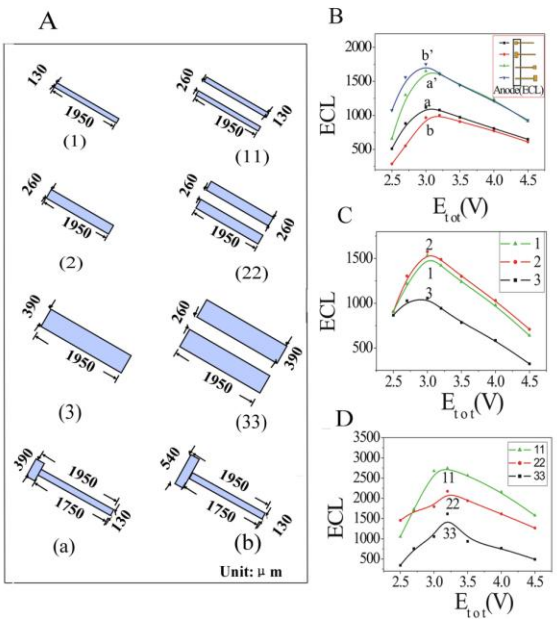

Figure S1. (A) The configurations of the BPEs used in the experiments. (B-D) ECL responses on these BPEs in 0.1 M PBS (pH 7.4) containing 3.8 μM $Ru(bpy)_3^{2+}$ and 5.2 mM TPA. The detection time was set at 120s. Curves a and a' or b and b' in (B) were obtained on electrode a or b but with opposite electric field applied on the microchannel.

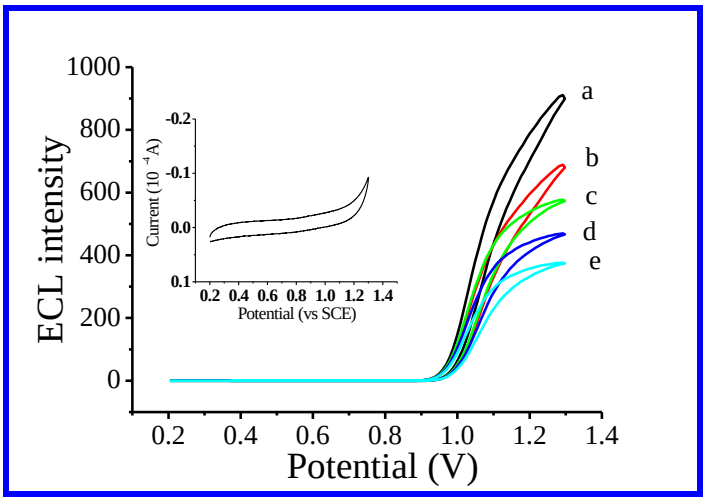

Figure S2 ECL-potential curves of $Ru(bpy)_3^{2+}$/TPA system in different concentrations of FA (from a to e: 0, 0.25 pM, 52.5 pM, 7.5 nM, 47.5 nM) at an ITO electrode (0.25 cm^2). Test solution: 0.1 M PBS containing 3.8 μM $Ru(bpy)_3^{2+}$ and 5.2 mM TPA; scan rate, 0.05V/s. **Inset:** Typical cyclic voltammogram of 0.2 nM FA. The 0.25 cm^2 ITO electrode was fabricated as follows: ITO-coated aluminosilicate glass slides was first sliced into small pieces with 0.5 cm width and 3 cm length, and then the ITO layer was covered with adhesive tape leaving 0.25 cm^2 exposed as an ITO electrode.

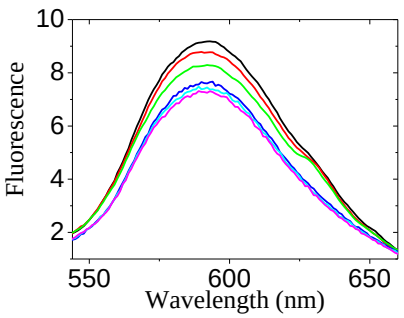

Figure S2. Fluorescence spectra of $Ru(bpy)_3^{2+}$/TPA in different concentrations of FA (from upper to down: 0, 15 pM, 54 pM, 100 pM, 10 nM, 10 μM). The concentration of $Ru(bpy)_3^{2+}$ was 3.8 μM and TPA was 5.2 mM.