

Supplementary Information

Supersensitive detection of lincomycin with an ECL aptasensor based on the synergistic integration of gold functionalized upconversion nanoparticles and thiolated 3,4,9,10-perylene tetracarboxylic acid

Xiaohui Chen,^{*a} Jing Wen,^b Xuelin Shan,^b Wenchang Wang,^b and Zhidong Chen^{*b}

^a *School of Chemistry and Material Engineering, Changzhou Institute of Technology, Changzhou 213032, China. E-mail: chenxh@czu.cn*

^b *School of Petrochemical and Engineering, Changzhou University, Changzhou 213164, China. E-mail: zdchen@cczu.edu.cn*

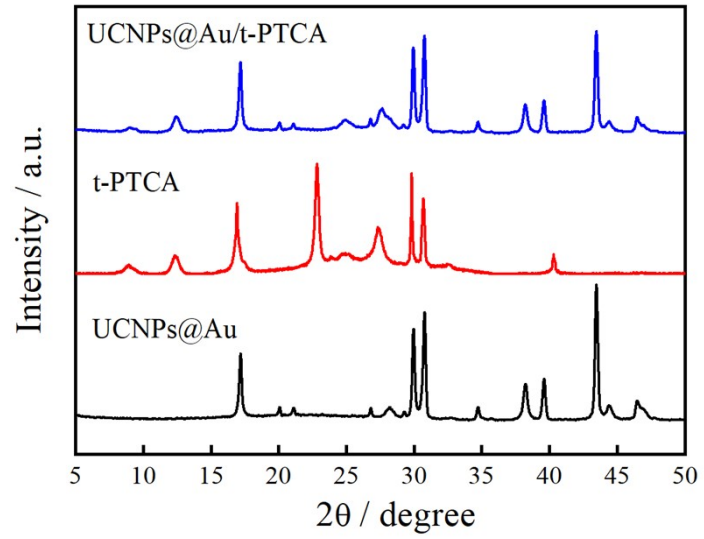


Fig. S1. The XRD patterns of UCNPs@Au, t-PTCA, and UCNPs@Au/t-PTCA.

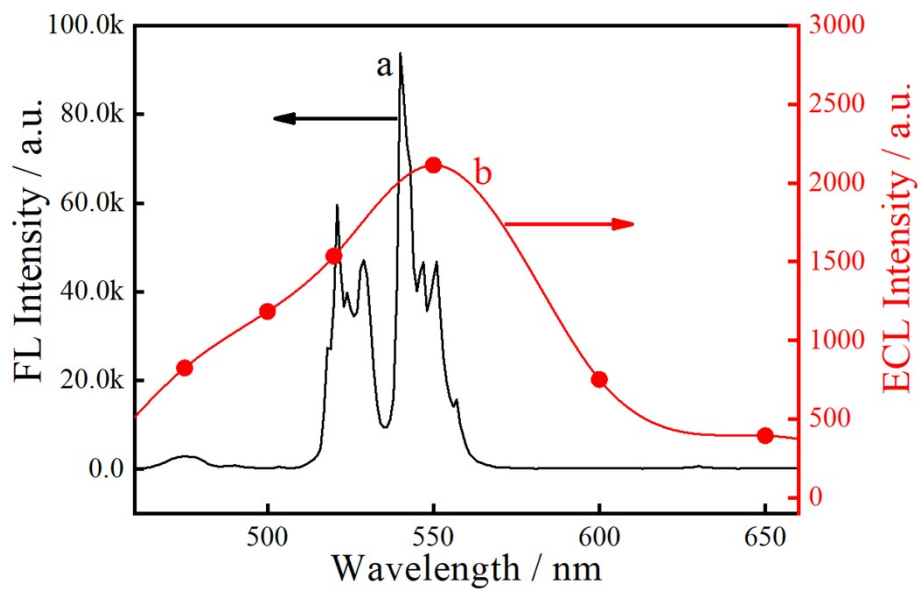


Fig. S2. The (a) FL and (b) ECL spectroscopy of UCNPs@Au/t-PTCA/GCE.

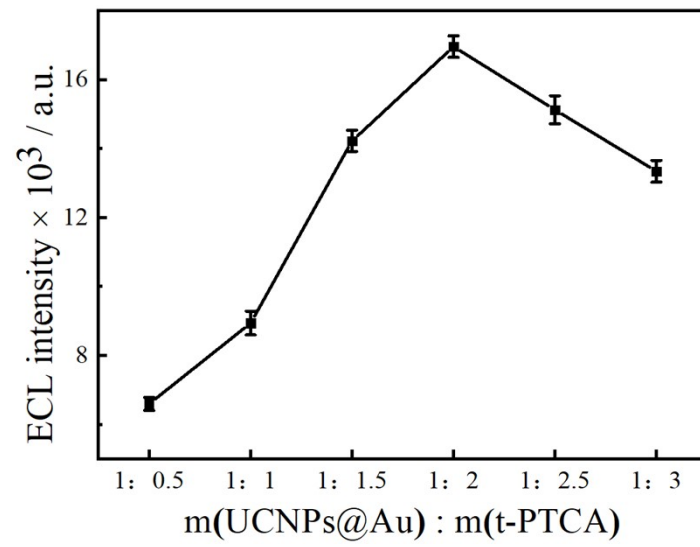


Fig. S3. The effects of the ratio of UCNPs@Au to t-PTCA on the ECL intensity of the UCNPs@Au/t-PTCA/GCE.

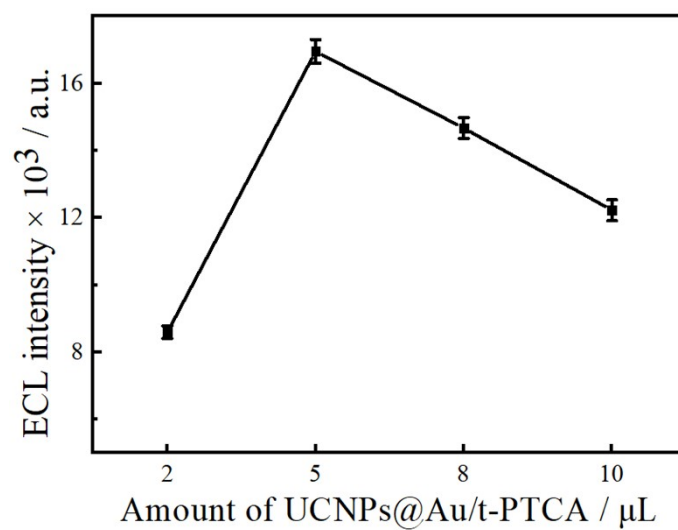


Fig. S4. The effects of the amount of UCNPs@Au/t-PTCA on the ECL intensity of the UCNPs@Au/t-PTCA/GCE. UCNPs@Au/t-PTCA concentration: 1.0 mg/mL.

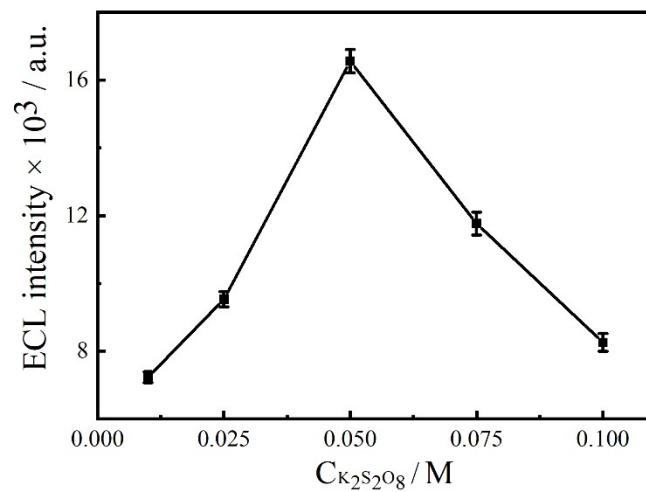


Fig. S5. The effects of the $K_2S_2O_8$ concentration on the ECL intensity of the UCNPs@Au/t-PTCA /GCE.

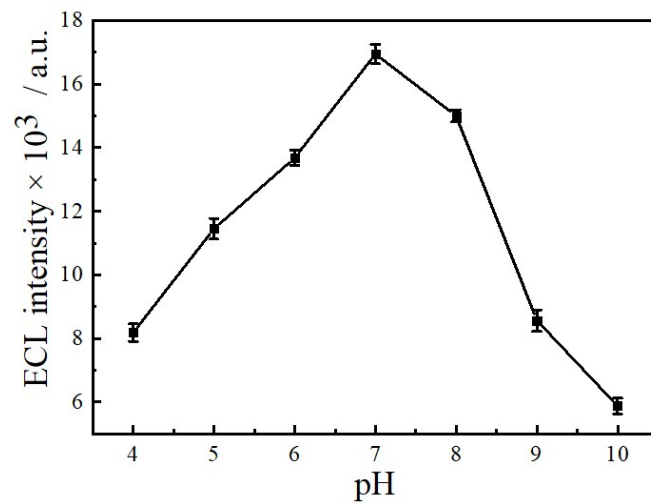


Fig. S6. The pH on the ECL intensity of the UCNPs@Au/t-PTCA/GCE in 0.1 M PBS containing 0.05 M $K_2S_2O_8$.

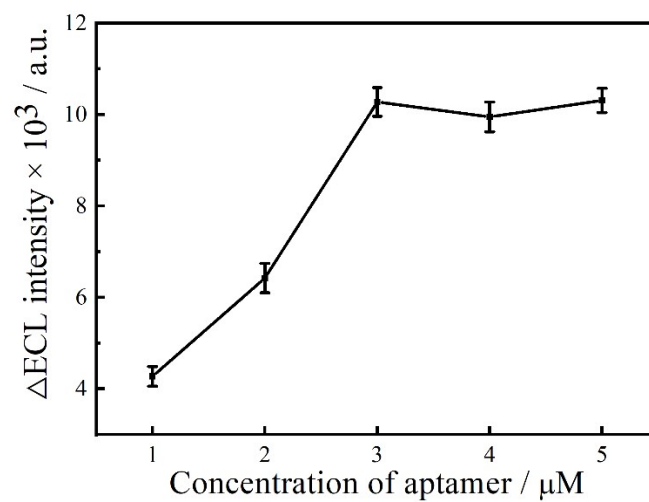


Fig. S7. The effects of the concentration of the loaded aptamer on the Δ ECL of the apt/UCNPs@Au/t-PTCA/GCE.

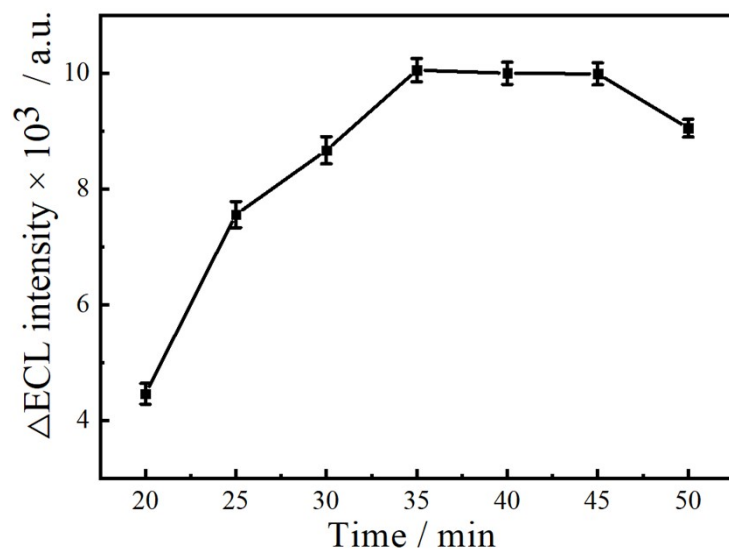


Fig. S8. The effects of the binding time of the Lin on the Δ ECL of the apt/UCNPs@Au/t-PTCA /GCE.