SUPPORTING INFORMATION

A Dual-Color Fluorescent Biosensing Platform Based on Amine Functionalized 3D Copper Prussian blue Nanocube and Exonuclease I Activity for Simultaneous Detection of Kanamycin and Streptomycin

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The cDNA@NH_2-CuPBNC formation is confirmed by zeta potential analysis (**Figure S1 a**) of all the three samples such as cDNA, NH_2-CuPBNC and cDNA@NH_2-CuPBNC. Unmodifed NH_2-CuPBNC shows a zeta potential of +9.6 mV, and cDNA was −18.1 mV. After modifcation with cDNA, it was found that the zeta potential was −8.9 mV. This demonstrates that the negative charged cDNA has been strongly attached on the positive charged NH_2-CuPBNC surface. This was further confirmed by EDX analysis of cDNA@NH_2-CuPBNC as shown in **Figure S1 b**. The EDX spectrum reveal that C, N, O, Cu, Co, Si and P elements are homogeneously distributed in cDNA@NH_2-CuPBNC. It is worth noting that the appearance of P element proves the successful introduction of cDNA on the NH_2-CuPBNC surface. In addition, the FTIR band at 1080 cm^{-1} could be derived from υPO in the phosphate skeleton of cDNA [1], which also confirms that the successful adsorption of cDNA onto NH_2-CuPBNC (**Figure S1 c**). The image gel electrophoresis was used to examine the activity of cDNA@NH_2-CuPBNC and antibiotic interacted cDNA@NH_2-CuPBNC as shown in **Figure S1 d**. Figure S1 d, lane 1, depicts the free cDNA@NH_2-CuPBNC (ssDNA) gel electrophoresis. The gel electrophoresis image changed after the addition of target specific DNA, indicating that the target specific DNA hybridized with cDNA to form dsDNA on the surface of NH_2-CuPBNC (lane 2). When antibiotics were added, the gel electrophoresis image changed, demonstrating that antibiotics change the dsDNA structure (lane 3).

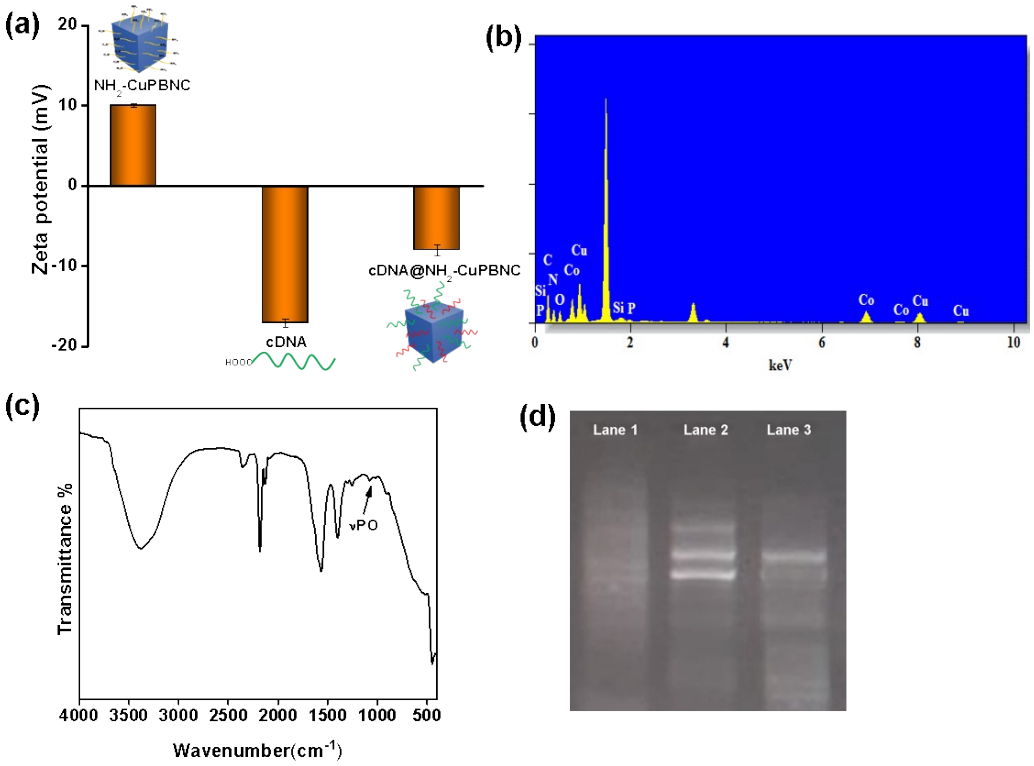

Figure S1. Confirmation for cDNA@NH_2-CuPBNC formation by (a) zeta potential, (b) EDX and (c) FTIR analysis (d) Image gel electrophoresis for interaction of cDNA@NH_2-CuPBNC and specific target ssDNA, with antibiotics interaction.

REFERENCE

[1] C. Burattini, M. Dell'anna, Monti Campeggi, *Vib. Spectrosc*. 2008, **47**, 139–147.