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Abstract

In this paper, we constructed a novel label-free analytical strategy for highly sensitive and selective detection of nitrofurantoin (NFT) based on adenosine-stabilized copper nanoclusters (CuNCs) as nanoprobes. It was found that NFT caused a rapid decrease in the photoluminescence intensity of CuNCs. The photoluminescence quenching was likely attributed to the inner filter effect between NFT and CuNCs. The CuNCs exhibited a wide linear range of 0.05–4.0 μM with the detection limit of 30 nM (7.1 ng mL^{-1}) for detection of NFT. And it was successfully applied for NFT detection in lake water samples.

Keywords: Copper nanoclusters; Photoluminescence analysis; Nitrofurantoin