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Rapid microwave-assisted synthesis of molecularly imprinted polymers
on carbon quantum dots for fluorescent sensing of tetracycline in milk

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Abstract

In this paper, a novel, selective and eco-friendly sensor for the detection of tetracycline was developed by grafting imprinted polymers onto the surface of carbon quantum dots. A simple microwave-assisted approach was utilized to fabricate the fluorescent imprinted composites rapidly for the first time, which could shorten the polymerization time and simplify the experimental procedure dramatically. The novel composites not only demonstrated excellent fluorescence stability and special binding sites, but also could selectively accumulate target analytes. Under optimal conditions, the relative fluorescence intensity of the composites decreased linearly with increasing the concentration of tetracycline from 20 nM to 14 μ M. The detection limit

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