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A Luminescence Nanosensor for Ornidazole Detection using Graphene Quantum Dots Entrapped in Silica Molecular Imprinted Polymer

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Abstract

A luminescence nanosensor has been developed for analysis of Ornidazole in biological samples using graphene-quantum-dot-embedded silica molecular imprinted polymer (GQD-SMIP) as a selective probe for this analyte. The GQD-SMIP was found to possess a strong fluorescent emission at 450 nm upon excitation at 365 nm. This emission was found to linearly quench in the presence of Ornidazole in a concentration range of 0.75 to 30 μM . A detection limit of 0.24 μM was reached using the probe and the sensor was successfully used in the determination of the analyte in plasma samples.

Keywords: Nanosensor, Luminescent detection, Graphene quantum dots, Ornidazole, Molecularly imprinted polymer, Silica

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