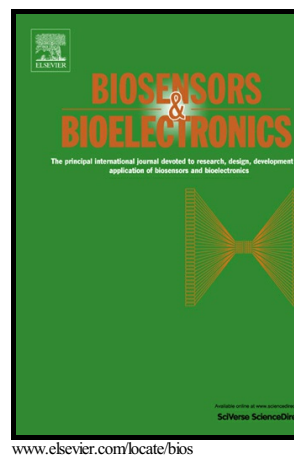


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**Stimulus-response mesoporous silica nanoparticle-based chemiluminescence biosensor for cocaine determination**

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**Abstract**

Mesoporous silica nanoparticles (MSN) based controlled release system had been coupled with diverse detection technologies to establish biosensors for different targets. Chemiluminescence (CL) system of luminol/H<sub>2</sub>O<sub>2</sub> owns the characters of simplicity, low cost and high sensitivity, but the targets of which are mostly focused on some oxidants or which can participate in a chemical reaction that yields a product with a role in the CL reaction. In this study, chemiluminescent detection technique had been coupled with mesoporous silica-based controlled released system for the first time to develop a sensitive biosensor for the target which does not cause effect to the CL system itself. Cocaine had been chosen a model target, the MSN support was firstly loaded with glucose, then the positively charged MSN interacted with negatively charged oligonucleotides (the aptamer cocaine) to close the mesopores of

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