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A simple and rapid fluorescent aptasensor for ultrasensitive detection of arsenic based on target-induced conformational change of complementary strand of aptamer and silica nanoparticles

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Highlights

- * Arsenic (As) is one of the most toxic heavy metals which can be found in natural waters, soils and atmosphere.
- * In this study, a fluorescent aptasensor was designed for the detection of As (III) based on target-induced conformational change of complementary strand of aptamer (CS1) and silica nanoparticles coated with streptavidin (SNPs-Streptavidin).
- * The sensor described here had several attractive features, such as simplicity, rapid response and use of label-free aptamer.
- * The sensor exhibited a wide linear range between 2-500 nM and a very low detection limit of 0.45 nM.
- * In addition, the applicability of the developed method was tested using tap water and serum samples with satisfactory results.

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