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A Label-free Triplex-to-G-Qadruplex Molecular Switch for Sensitive Fluorescent Detection of Acetamiprid

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Abstract

The detection and monitoring of acetamiprid has drawn extensive attentions, due to their potential threat to human health. Herein, a simple, sensitive and label-free fluorescent assay based on triplex-to-G-qadruplex (TTGQ) molecular switch, was developed for the assay of acetamiprid in aqueous solution. In this detection, the proposed TTGQ molecule contained the acetamiprid aptamer sequence at its loop part and the triple-helix structure at its stem part. One single-stranded DNA grafted by two split G-rich DNA sequences at its two ends, participated in the assembly of the