Structure-switching Aptamer for detection of proteins

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A new method of aptamer-protein binding has been developed using fusion aptamer containing no chemical modification. We prepared the fusion aptamer which connected two aptamers. The fusion aptamer consists of three parts. The first part is the malachite green (MG) aptamer as signaling domain, the second part is HCV replicase aptamer as recognition domain and the third part is inducing domain to induce a conformational change of the fusion aptamer. It transduce the recognition signal through allosteric regulation of interaction with MG and target protein. We tested the fusion aptamer for target protein, HCV replicase. We were able to detect the binding event by monitoring the fluorescence change of MG using spectrofluorometer and confocal laser scanning microscopy. It shows that the fluorescence of MG increased upon adding HCV replicase.