

Label free detection of HCV proteins using modular aptameric sensor

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A new method of aptamer-protein binding has been developed using fusion aptamer containing no chemical modification¹. 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 protein(helicase and 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 proteins, HCV helicase and replicase. We were able to detecte the binding event by monitoring the fluorescence change of MG using spectrofluometer. It shows that the fluorescence of MG increased upon adding HCV proteins.

References

1. Milan N. Stojanovic and Dmitry M. Kolpashchikov, Modular aptameric sensors(2004), *J. Am. Chem. Soc.*, 126, 9266-9270.