

Point-of-care biochemical assay using aptamer-based analytical bioconjugate

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Point-of-care (POC) assay has become the most famous tool of diagnosis in clinical analysis, food safety and environmental monitoring. Nucleic acid aptamers have many of the properties that make for effective reagents in point-of-care diagnosis and whilst superficially similar to antibodies as affinity reagents the scope for engineering them to fit this role is considerable. As molecular recognition probes, Aptamer are advantageous in high binding affinity and specificity, quick and readily availability, easy and controllable chemical modification, long-term stability and great flexibility for design of bioanalysis assay. Because of these important features, more and more interest has been attracted in developing an aptamer-target capturing system. This study is focused on the development of POC using aptamer-based bioconjugate. Using the in-vitro selection, aptamers obtained high affinity and specific binding with target for example metal ion, pathogenic biomarker, foodborne bacteria. We developed POC assay such as metal-ion filter, colorized strip and quantitative analyze. It can be potentially applied to useful point-of-care testing tool from contaminated environment.