
Heterogeneous chemiluminescent assays based on oligonucleotides use

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Abstract

Detection of DNA sequences is of great importance for cancer diagnostics, pathogen determination and forensic analysis. DNA detection techniques are often based on hybridization reaction. Although homogeneous methods are more rapid and simple, heterogeneous methods are more sensitive and less prone to matrix effect in real samples analysis. In our work some formats of microplate sandwich assay for DNA detection with different capture and reporter conjugates have been developed. DNA sequence of hepatitis B virus was used as a model target molecule. Since the surface of microplate wells is limited, the highly sensitive detection system based on HRP-catalysed chemiluminescence with the use of phenothiazine enhancers in combination with N-morpholinopyridine was applied. This work was supported by the Russian Science Foundation (Grant No. 17-14-01042).

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