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Electrochemical DNA sensors based on electropolymerized materials

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ABSTRACT

The use of electropolymerized materials in the DNA sensors is reviewed with particular emphasis on their functions and specific interactions with DNA and oligonucleotides. Polyaniline, polypyrrole, polythiophenes and polymeric forms of phenazines play significant role in the immobilization and signal transduction of DNA sensors for the detection of hybridization events, DNA–protein and other specific interactions on the sensor surface. The mechanism of electropolymerization and the influence of oligonucleotides are also considered for various types of polymers. The DNA sensor performance is classified in accordance with the biological targets and composition of the surface layer.

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