

Electrochemical nucleic acid-based biosensors: Concepts, terms, and methodology (IUPAC Technical Report)

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Abstract

An electrochemical nucleic acid (NA)-based biosensor is a biosensor that integrates a nucleic acid as the biological recognition element and an electrode as the electrochemical signal transducer. The present report provides concepts, terms, and methodology related to biorecognition elements, detection principles, type of interactions to be addressed, and construction and performance of electrochemical NA biosensors, including their critical evaluation, which should be valuable for a wide audience, from academic, biomedical, environmental, and food-testing, drug-developing, etc. laboratories to sensor producers. © 2010 IUPAC.

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Keywords

Aptamers, Biosensors, DNA damage, Electrochemistry, IUPAC analytical chemistry division, Nucleic acid hybridization, Nucleic acid interactions, Nucleic acids