




DNA-Mediated Electrochemistry

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Abstract

The base pair stack of DNA has been demonstrated as a medium for long-range charge transport chemistry both in solution and at DNA-modified surfaces. This chemistry is exquisitely sensitive to structural perturbations in the base pair stack as occur with lesions, single base mismatches, and protein binding. We have exploited this sensitivity for the development of reliable electrochemical assays based on DNA charge transport at self-assembled DNA monolayers. Here, we discuss the characteristic features, applications, and advantages of DNA-mediated electrochemistry.