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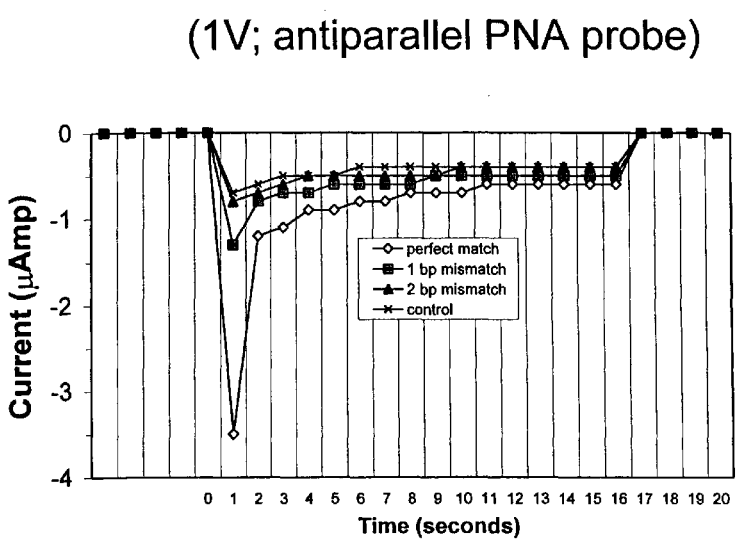
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(54) Title: HOMOGENOUS ASSAY OF DUPLEX OR TRIPLEX HYBRIDIZATION BY MEANS OF MULTIPLE MEASUREMENTS UNDER VARIED CONDITIONS



(57) Abstract: The invention provides homogeneous assay methods for nucleic acid hybridization, detection and evaluation. The assay includes obtaining signals from a test sample both before and during the application of a voltage to the test sample and correlating the signals, each of which is indicative of the binding affinity of the probe and the target to each other. The assay enables determining an extent of matching between the probe and the target, as the voltage can be calibrated so as to destabilize significantly any hybridization except perfectly complementary hybridization. The signals whose magnitude is correlated with binding affinity can be electrical conductance and/or fluorescent intensity. Preferably, both signal pairs are measured and compared so as to enhance the reliability of the assay. The assay can detect specific hybridization between single-stranded probes and non-denatured double-stranded targets to form triplexes, thus obviating the need to denature the targets. The assay methods can also be applied to duplex hybridization complexes.

WO 01/53526 A2

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