

Title (en)

METHODS AND MATERIALS FOR OPTIMIZATION OF ELECTRONIC HYBRIDIZATION REACTIONS

Title (de)

VERFAHREN UND MATERIALIEN ZUR OPTIMIERUNG DER ELEKTRONISCHEN HYBRIDISIERUNGSREAKTION

Title (fr)

PROCEDES ET MATERIELS POUR OPTIMISER DES REACTIONS D'HYBRIDATION ELECTRONIQUES

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Application

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Abstract (en)

[origin: WO9810273A1] The following inventions relate to discoveries concerning the various parameters, electrolytes (buffers), and other conditions which improve or optimize the speed of DNA transport, the efficiency of DNA hybridization reactions, and the overall hybridization specificity in microelectronic chips and devices. In particular, this invention relates to the discovery that low conductance zwitterionic buffer solutions, especially those containing the amino acid Histidine prepared at concentrations of SIMILAR 50 mM and at or near the pI (isoelectric point SIMILAR pH 7.47), provide optimal conditions for both rapid electrophoretic DNA transport and efficient hybridization reactions. Hybridization efficiencies of at least a factor of 10 relative to the next best known buffer, Cysteine, are achieved. Test data demonstrate an approximately 50,000 fold increase in hybridization efficiency compared to Cysteine.

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