

## STR AND SNP IDENTIFICATION ON AN ELECTRONIC MICROCHIP

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Nanogen's technology exploits the use of free solution electrophoreses on microchips to transport, concentrate, and accelerate hybridization of nucleic acids. These procedures are all performed under low ionic strength conditions, which prevents hybridization at sites other than those electronically activated. As an open system, test sites are only defined by electric field gradients, which are controlled in a programmable way. Thus the characteristics of each individual test site are continuously adjustable by the field applied.

We have utilized this technology to develop a platform for resolving single nucleotide polymorphisms, and short tandem repeats (for human identification and forensics) by hybridization on an electronic microchip. We have also developed methods to enhance cell separation, and target amplification, which may be performed on microchips and may also be applicable for separation of mixed forensics samples. Examples of each will be presented.

