

Evaluation of SNPs in the Mitochondrial DNA Using NanoChip Microarrays in the Turkish Population

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ABSTRACT The single nucleotide polymorphism (SNP) genotyping technology was developed to analyze the currently increasing number of genetic variations associated with diseases and for genetic identification of individuals. This paper describes a novel assay for genotyping of SNPs at the displacement loop (D-loop) in mitochondrial DNA using the Nanogen, NanoChip Technology. The researchers selected the most common four SNPs in the mitochondrial DNA from population data around the world. The researchers developed assay conditions for SNPs including, 73 A→G, 16304 T→C, 16311 T→C, and 16362 T→C. This paper carried out SNP genotyping including the first and second hypervariable regions of unrelated 72 samples of the Turkish population. All the identified genotypes were compared with results obtained previously from DNA sequencing of the same individuals. These findings demonstrated that the assay was accurate, reliable and reproducible for individual identification in the forensic and anthropology fields and to determine the risk of various diseases.