THE USE OF SINGLE NUCLEOTIDE POLYMORPHISM (SNP) MARKERS FROM THE NRY REGION OF THE HUMAN Y CHROMOSOME FOR GENEALOGICAL AND FORENSIC APPLICATIONS

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Over the course of studies involving the Y chromosome, many single nucleotide polymorphisms (SNPs) have been identified that provide powerful genetic information for medical diagnostics, forensic identification applications, human evolution studies, and genealogical analyses. Orchid Biosciences has developed an assay that genotypes specific informative unique event SNPs on the human Y chromosome. The assay utilizes multiplexed PCR in conjunction with SNP-IT™, Orchid's proprietary single base extension technology. This multiplex assay can be run either on an automated, ultra-high throughput system called SNPstream® UHT or using ABI's SNaPshot™ assay for lower test volumes. A variety of individuals from diverse ethnic backgrounds have been tested using these systems. Preliminary results indicate that an initial thirty-marker assay successfully groups DNA samples phylogeographically. Thus, this analysis should provide a powerful screening tool, as well as an accurate forensic assay, that identifies the origins of human populations. Data from both ethnically diverse samples as well as compromised biological specimens will be presented.