

INTERNAL VALIDATION OF THE MISEQ FGx FORENSIC GENOMICS SYSTEM

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The release of the MiSeq FGx Forensic Genomics System marked the beginning of a new era in forensic genomics. Specifically, the ability to simultaneously sequence autosomal, Y- and X-short tandem repeats (STRs) in addition to identity, biogeographical ancestry and phenotypic single-nucleotide polymorphisms (SNPs) provides a plethora of information that has previously been unavailable to forensic practitioners. Internal validation studies of the MiSeq FGx Forensic Genomics System were conducted as described in the Quality Assurance Standards for Forensic DNA Testing Laboratories, with the intention of implementation into the California Department of Justice's Missing Persons DNA Program. These studies included known and non-probative evidence samples, reproducibility, mixture, contamination assessment, sensitivity and stochastic studies. The results of these studies are presented with an emphasis on the practical implications in casework programs and the CA DOJ Missing Persons DNA Program, in particular.