

# Recent Developments in Y-Short Tandem Repeat and Y-Single Nucleotide Polymorphism Analysis

---

**REFERENCE:** Butler JM: Recent developments in Y-short tandem repeat and Y-single nucleotide polymorphism analysis; *Forensic Sci Rev* 15:91; 2003.

**ABSTRACT:** This article reviews new genetic markers on the Y-chromosome and methods for analyzing these short tandem repeat (STR) and single nucleotide polymorphism (SNP) loci. Relative chromosomal locations for over 50 Y-chromosome STRs (Y-STRs) are described along with their repeat motif and allele range characteristics based on published population studies. Multiplex assays for typing many of these markers in a parallel fashion are discussed, as are newly available commercial Y-STR kits. Approximately 250 SNP markers are now catalogued along the Y-chromosome (Y-SNPs) with a unified haplogroup nomenclature describing their relative relationships. Technologies for typing these Y-SNPs are reviewed including primer extension and allele-specific hybridization methods. Finally, available reference materials for standardization of allele calls, Y-STR allele nomenclature issues, and published validation and interlaboratory studies are reviewed.

**KEY WORDS:** Y-Chromosome, forensic DNA typing, Luminex, multiplex PCR, SNaPshot, Y-SNP, standard reference materials, Y-STR, STR nomenclature issues.

---