

NIST SRM 2395 AND OTHER Y CHROMOSOME WORK

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At the U.S. National Institute of Standards and Technology (NIST), we have developed a human Y chromosome Standard Reference Material, SRM 2395, which is now available to enable calibration of Y STR results across laboratories worldwide. SRM 2395 includes 5 male DNA samples selected to exhibit a diverse set of alleles across 31 commonly used Y chromosome short tandem repeat (STR) and 42 single nucleotide polymorphism (SNP) markers. A female DNA sample is also included to serve as a negative control for male-specific DNA tests. In addition to the typing results from all commercially available Y-STR kits, the five male samples in SRM 2395 have been sequenced at 22 Y-STR loci to confirm allele calls.

Our group has developed several novel Y-STR multiplexes including a 10plex [1] and a 20plex [2]. We have also evaluated the diversity of 22 Y-STRs in 650 males from U.S. Caucasian, African American, and Hispanic populations [3]. In addition, results from 50 Y-SNPs examined in over 200 U.S. Caucasians and African Americans will be presented [4]. We continue to post recent developments in Y chromosome work on the STRBase web site: <http://www.cstl.nist.gov/biotech/strbase/>. Y STR fact sheets that describe primer sequences, allele sizes and sequences, and references to population data are available for all commonly used Y-STR loci.

References

- [1] Schoske, R., *et al.* (2003) *Anal. Bioanal. Chem.* 375: 333-343
- [2] Butler, J.M., *et al.* (2002) *Forensic Sci. Int.* 129: 10-24
- [3] Schoske, R., *et al.* (2003) *Forensic Sci. Int.*, *in press.*
- [4] Vallone, P.M. and Butler, J.M., *submitted.*