

NIST SRM UPDATES: VALUE-ADDED TO THE CURRENT MATERIALS IN SRM 2391B AND SRM 2395

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National Institute of Standards and Technology (NIST) has produced several PCR-based DNA Profiling Standard Reference Materials (SRMs) for the forensic community. Primary uses of these materials are validation and calibration of currently used methods for quality assurance purposes. As advances in methodologies occur, there becomes a need to update the certified values for current SRM materials to keep pace. To that end we are updating the Certificates of Analysis for SRM 2391b PCR-based DNA Profiling Standard and SRM 2395 Human Y-Chromosome DNA Profiling Standard. Updates to SRM 2391b and SRM 2395 involve typing the SRM components with the additional loci and confirming the certified repeat numbers through DNA sequencing. Details regarding the certification process will be presented along with the updated certified values. SRM 2391b certificate updates include genetic typing with mini-short tandem repeat (miniSTR) loci, which produce smaller sized polymerase chain reaction (PCR) products used for analyzing degraded DNA. At present 26 miniSTR loci have been selected for inclusion on the updated certificate: D1GATA113E02, D1S1627, D1S1677, D2S441, D2S1776, D3S3053, D3S4529, D4S2364, D4S2408, D5S2500, D6S474, D6S1017, D8S1115, D9S1122, D9S2157, D10S1248, D10S1435, D11S4463, D12ATA63A05, D14S1434, D17S974, D17S1301, D18S853, D20S482, D20S1082, D22S1045 [1]. SRM 2395 currently contains certified values for 22 different Y-STR loci confirmed through DNA sequencing and 5 loci that have been typed but not sequenced. Since SRM 2395 became available in July 2003, Applied Biosystems released the Yfiler kit containing 17 Y-STRs, including DYS635. We have sequenced the DYS635 locus with the 5 male components of SRM 2395 to enable coverage of the DYS635 locus [2]. The updated certificate will include DYS635 certified values as well as 20 new Y-STR loci chosen from a screen of 68 markers based on their informational value and availability from genetic genealogy companies. The loci include: DYS449, DYS481, DYS492, DYS505, DYS522, DYS527, DYS532, DYS534, DYS570, DYS572, DYS576, DYS607, DYS650, DYS652, DYS709, DYS710, DYS712, DYS715, DYS717, and DYS724.

Copy of poster available:

http://www.cstl.nist.gov/biotech/strbase/pub_pres/Promega2006_Kline.pdf

REFERENCES [1] Hill, C.R., Coble, M.D., Butler, J.M. (2006) Development of additional new miniSTR loci for improved analysis of degraded DNA samples. submitted. [2] <http://www.cstl.nist.gov/biotech/strbase/srm2395.htm>