B99 A Comparison of Y-STR Multiplexes

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Attendees will learn how various Y-STR multiplexes compare to one another and their applicability to forensic casework.

This presentation will impact the forensic community and/or humanity by providing an understanding the available types of Y-STR kits and their advantages/disadvantages will enable crime laboratories to make an informed decision when selecting a Y-STR multiplex.

Y-STR testing enables forensic DNA analysts to examine the male contribution of an evidentiary sample without interference from female DNA. This testing can be quite valuable for cases in which traditional autosomal STR testing has been unsuccessful or has yielded inconclusive results. The proportion of forensic cases utilizing Y-STRs has increased as DNA analysts, law enforcement agencies, and lawyers learn of the advantages of Y-STR testing. In response to the increased demand for Y-STR analysis, several multiplexes have been developed to allow for the simultaneous amplification of Y-chromosome loci. The present study compares a Y-STR 10-plex already employed in casework at Orchid Cellmark, as well as two commercially available multiplexes (Applied Biosystems' Y-Filer and Promega's PowerPlex®-Y). The sensitivity and reproducibility of each multiplex, as well as analysis of female:male and male:male mixtures has been examined. The advantages and disadvantages of each multiplex as they relate to its applicability to forensic casework will also be presented.

Y-STR, Multiplex, DNA

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