

# Forensic Casework Using Y-Chromosome Short Tandem Repeats

S. K. Sinha

ReliaGene Technologies, Inc.  
New Orleans, Louisiana  
United States of America

Casework experiences from two laboratories in the U.S. and a forensic laboratory in Germany routinely performing Y-STR analysis are summarized in the following three articles. There are many other laboratories around the world that are performing Y-STR analysis in forensic cases using either “in-house” or commercially available systems. Implementation of Y-STR testing for the laboratories that are performing autosomal STR analysis is not a difficult task. This is because the instrument platforms, analysis procedures, result interpretation guidelines, etc., are very similar [3,6,11]. The published literature reveals that Y-STRs are useful in resolving difficult cases [1,2,4,5,7–10,12–16]. In a situation where the evidence sample contains very low total sperm count (<50) and a very high number of a victim’s epithelial cells, it is advantageous not to perform differential digest in order to minimize sample loss and proceed with Y-STR analysis to obtain the male profile. In cases of fingernail scraping, multiple assailants in a rape case, or evidence samples with seminal fluid, presumptive test positive and sperm negative, Y-STR analysis has proved to be a valuable tool. For casework application, validated haplotype databases are freely available in websites [17–20].

The following three reports provide some examples of usefulness of Y-STR testing in forensic casework and highlight its advantages and limitations.

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