

APPLICATIONS OF Y-STR TYPING IN FORENSIC CASEWORK

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Since every male has a Y chromosome which can be inherited from his father to son, the Y chromosome represents a unique record of his paternal inheritance. Because Y-STRs are only found in male genome, it has several advantages. First, analysis of Y-STRs allows to obtain only the male profile, even when there are massive amounts of female DNA. Second, additional mixtures of two or more people from criminal evidences, such as fingernail scrapings, blood-blood mixture, saliva on skin, possibly can be analyzed. Third, Y-STRs are useful for discovering family lineage.

We summarized four criminal cases, which were performed by Y-STR testing. The criminal cases include sexual assaults, burglary, murder and abandonment of babies. Y-STR testing was applied to the forensic evidences such as vaginal swabs, fingernails, saliva on skin and buccal swabs. As results of male DNA analysis, DNA profiles of suspect were appeared. If suspect's buccal swab were included in evidence, the accordance between criminal evidence and suspect's buccal swab can be examined by Y-STR profiles. According to these forensic cases, we suggest that the Y-STR typing systems provided useful results with autosomal STR in several cases and can be an important tool in forensic caseworks. ♫