

DNA identification of condom and vaginal epithelial cell in rape case, where penetration is without ejaculation by sexual offenders

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Sex related crimes are most heinous humiliating and unwitnessed crimes. Women and children remain the most vulnerable group to this crime. To determine the genetic profile of the male donors in the presence of large quantities of female DNA in cases of stains that contain mixed DNA from different contributors, analyzing condom with male urethral epithelial cells from vaginal swab is done. The presence of a single allele from each male should facilitate the determination of the correct number of male donors. To determine the level at which two male samples in mixed samples could be detected and typed. DNA from two males was mixed in various ratios (1/2, 1/3, 1/6, 1/12, 1/15, 1/20, 1/30) and a total of 3 ng amplified using Y-STR profile. The presence of two individuals determined by the presence of two allelic signals at a single locus (except DYS385) was clearly discernible, when the 1st suspect was present at 1/2, 1/3, 1/4 and 1/6 Concentration of the suspect 2nd. However when first contributor comprised 1/12 or less of the total DNA in which male urethral epithelial and outer surface of condom DNA revealed by autosomal STR filer and the second contributor was noticeable in inside part of condom by Y-STR profile. The identification of the number of male donors by Y-STR analysis is exemplified in the case of a two-male admixture with condom and the significance of condom evidence confirm victim statements rape claimed and evidence of vaginal penetration.

Biography

Sarabjit Singh is forensic expert & investigation officer in the Department of DNA, SIFS Forensic Science Services, New Delhi. He has completed his Ph.D. from BU, University India at the age of 27 years. This work is first time done in India and got most prestigious awards, 3 times International & National Young Scientist award. He has 10 years experience in DNA analysis from sexual assault cases, crime scene investigation, and expert witness. He has published many scientific articles in reputed journals/conference. He is associated with various internationals societies like Indian Academy of Forensic Medicines, International Indo-Pacific Academy of Forensic Nursing Science and Forensic Medicine.

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