

MUTATIONAL EVENTS IN THE STR LOCUS D21S11, D18S51 OF PARENTS ALLELE MISMATCH IN THE CHILD

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We report two cases one for maternity dispute and another for paternity dispute. We analyzed these two cases with 15 autosomal STR loci. In the maternity dispute case a mismatch in one of the alleles of D21S11 in the child was found, and in the case of paternity dispute a mismatch in one of the alleles of D18S51 was found. In maternity dispute case the allele types of D21S11 in the child, mother and alleged father were 28/28,29/32.2,28/30, respectively. In paternity dispute case the allele types of D18S51 in the child and alleged father were 16/22, 18/23, respectively. Further analysis of 16 Y chromosome STR loci or 7 X chromosome STR loci in these two cases revealed matching of all alleles of the child with that of the mother or alleged father. Since there were perfect match of all the paternal or maternal alleles inherited (15 autosomal with 16Y chromosomal or 7X chromosomal) in the child from that of the alleged father or mother except the locus D21S11 or D18S51. We suggested that this might be two cases of mutation. Using the mutation rate divided by the average probability of exclusion to calculate the paternity index (PI) of mutation loci according to formula described in AABB annual report summary 2003 the CPI value of duos are 1.52×10^5 , 1.97×10^3 respectively, that leads 99.9% of specificity. Besides, sequencing of all the alleles of the locus D21S11 of the trio case revealed that the child inherited a unique STR structure from the mother, further confirmed the mutational event.