POPULATION GENETICS OF EIGHT NEW Y CHROMOSOMAL STR HAPLOTYPES IN THE ANTIOQUIA POPULATION, COLOMBIA

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Analysis of microsatellite systems located on the nonrecombining portion of the human Y chromosome is a powerful tool in male identification, paternity testing and evolutionary studies.

Human Y-chromosome specific short tandem repeat loci, GATA-C4, DYS438, DYS437, DYS461, GATA-H4, DYS439, GATA-A10 and DYS460 were studied in 179 men of Antioquia population, Colombia, in order to present gene frequencies distribution, genetic diversity for each locus, and give some parameters of forensic interest. Antioquia population is considered as constituted mainly by Caucasian. Two PCR quadruplex reactions were developed and optimized, PCR fragments were separated in 4% acrylamide-*bis*-acrylamide denaturing gels followed by silver staining. Allele size determination and genotyping were performed according to recommendations of the DNA Commission of the International Society of Forensic Genetic using the allelic ladder manufactured at home.

Gene frequencies, gene and haplotype diversity for eight STR were calculated using ARLEQUIN version 2000. GATA-C4 showed the biggest gene diversity. In the Antioquia population sample a total of 132 different haplotypes were observed among which 85 were unique and 38 were found at least two times. The haplotype diversity for the eight Y-Chromosomal STR loci was calculated to be 0.9949. This implies that this set of Y-specific STR loci will be valuable additions to our current test panel and will improve the exclusion probabilities in forensic and kinship cases when individuals from Antioquia are involved.