

A NEW DUPLICATION IN DYS19 STUDY WITH 17 STR MARKERS ON THE Y-CHROMOSOME IN POPULATIONS OF THE COLOMBIAN CARIBBEAN COAST

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Y-Chromosome STR markers are being used as a useful tool in population and forensic studies. One of the main applications in the forensic field is the determination of the number of contributors in a sample involving a mixture of male-female or male-male cells.

Most of the Y-Chromosome loci used are single copy, except for loci such as DYS385a/b, usually only one allele is observed. However, recent studies have been reporting additional alleles in single copy systems.

The aim of the present study was to determine the allele frequency and haplotype composition in 305 unrelated males, from seven departments of the Colombian Caribbean coast (Atlántico, Bolívar, Magdalena, Sucre, Cesar, Córdoba and Guajira), using 17 Y-chromosome STR markers (AmpFISTR® Yfiler™).

In a total of 305 individuals, 283 haplotypes were found once and the 10 remaining were observed twice or thrice. The haplotype diversity found in each of the populations ranged between 99.66% and 99.99%, higher than in previously reported populations. Total population diversity was 99,97% and the discrimination power was 96,1%.

Two individuals were found with duplication in DYS19, one of them had the duplication 15-16, which according to other reports is the most common. The other individual had a duplication 11-15, not previously reported.

Additionally, 34 samples of 13 forensic cases were analyzed, a triplication in DYS385a/b was found, and this has only been reported once.