GENETIC VARIATION FOR 15 AUTOSOMAL STR LOCI (IDENTIFILER) IN A PUERTO RICO DATABASE POPULATION

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Amplification of short tandem repeat (STR) loci has become a useful tool for human identification and forensic case analysis because of the large number of STR loci in the human genome and their highly polymorphic nature.

The allele frequencies of 15 autosomal short tandem repeat loci included in the AmpFlSTR Identifiler kit (Applied Biosystems) were obtained from a sample set of unrelated individuals living in Puerto Rico (n=211) from different geographic areas of the island taken at random, to determine the allele frequency and genotype of fifteen loci plus Amelogenin contained in the AmpFlSTR Identifiler kit. For all loci "D8S1179, D21S11, D7S820, CSF1PO, D3S1358, TH01, D13S317, D16S539, D2S1338, D19S433, vWA, TPOX, D18S51, D5S818, Amelogenin and FGA.", no deviation from Hardy-Weinberg equilibrium was found. The values of heterozygosity, polymorphic information content (PIC), power of discrimination (PD), power of exclusion (PE), paternity index (PI) and matching probability (PM) were calculated.

Using statistical tool, samples were analyzed and interpreted, in order to determine the significance of allele frequency for given locus following chi-square test. In conclusion, in this study was demonstrated that Puerto Rican Data follows Hardy Weinberg equilibrium under assumptions of random mating.