# POPULATION DATA ON FGA, vWA, TPOX, TH01, PENTA E, D18S51, D21S11, D3S1358, D8S1179 AND D16S539, D7S820, D13S317, D5S818 IN A SAMPLE OF CAUCASIAN-MESTIZOS FROM COLOMBIA

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Before a new marker system can be introduced into forensic casework, a population database for the relevant population must be established for statistical evaluation of the evidence. Therefore, this report presents allele frequency data in a sample of Caucasian-Mestizos from Colombia (n = 247-267) for PowerPlex® 2.1 and (n= 491) for GammaSTR® loci.

Genomic DNA was isolated from whole blood by the Wizard® Genomic DNA isolation kit or the ReadyAmp™ DNA isolation kit (Promega Corporation). PCR amplification was performed according to the manufacturer's recommendations using the PowerPlex® 2.1 and the GammaSTR® systems (Promega Corporation). The PCR products were resolved in 5% Long Ranger denaturing gels for PowerPlex® 2.1 and in 4% Acrylamide-Bis-Acrylamide denaturing gel for GammaSTR® and detected in a Hitachi FMBIO® II scanner. Allele designations were made according to recommendations of the DNA Commission of the International Society for Forensic Genetics. Results demonstrate the assumption of independence within and between the loci analysed.

Statistical evaluations were performed using an HWE-Analysis software package. Analyses included the possible divergence from Hardy-Weinberg expectations and other parameters of forensic importance: minimum allele frequencies, observed and expected heterozygosities, mean exclusion chance (MEC), polymorphic information content (PIC) and discrimination power (DP). The possible associations between loci were tested using the computer program GDA (Genetic Data Analysis).

The combined power of exclusion is estimated as 99.9995% and the combined power of discrimination is 99.99999999962%. These 13 STR systems have been shown to be useful tools for personal identification. Therefore, this Colombian population database can be used in identity testing to estimate the frequency of a multiple PCR-based locus DNA profile in forensic cases as well as in paternity testing.