

FOR THE RECORD

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Genetic Variation for Penta D and Penta E in a Northeast Colombian Population (Department of Santander)

POPULATION: Department of Santander, Colombia ($n = 104$).

KEYWORDS: forensic science, DNA typing, short tandem repeats, population genetics, Colombia, Penta D, Penta E

Whole blood samples were obtained from 104 unrelated Colombian donors (Department of Santander) in whom previous informed consent was obtained. Genomic DNA was extracted using the salting out procedure. Amplification was performed using the commercial kit PowerPlex[®] 16 (Promega Corporation, Madison, WI), following the manufacturer's instructions. The amplified products were separated and detected using the ABI 310 DNA sequencer (PE-Biosystems, Foster City, CA). Alleles were classified according to the recommendations of the ISFH (1).

The statistical evaluation was carried out with the aid of GDA and PowerStats software packages (2,3). Statistical parameters such as power of discrimination (PD) and *a priori* chance of exclusion (CE) for each loci were estimated as described by Huston (4). Also, we calculated the polymorphic information content (PIC) according to Botstein et al (5). Minimum allele frequencies (MAF) for polymerase chain reaction-based loci, based on statistical and population genetics theory (6) were determined. Thus, a greater confidence of the DNA profile frequency estimates can be attained with current size databases. The Hardy–Weinberg equilibrium for each loci and linkage disequilibrium were verified using the GDA program. We did not find significant deviation from Hardy–Weinberg equilibrium at all loci. There is no evidence for departures from independence in the population analyzed (data not shown). The combined PD and *a priori* CE for the two loci is 0.9986 and 0.9240, respectively (Table 1).

The complete data set is available to any interested researcher upon request from author Dr. Clara Inés Vargas at cvargas@uis.edu.co.

TABLE 1—Allele frequencies for Penta D and Penta E in a Colombian population (Department of Santander).

Allele	Penta D	Penta E
2.2	0.0048	
5	0.0096	0.0433
7		0.0769
8	0.0144	0.0192
9	0.1635	
10	0.2163	0.0529
11	0.2212	0.1106
12	0.1250	0.2308
13	0.1731	0.0529
14	0.0625	0.0673
15	0.0096	0.1106
16		0.0433
17		0.0529
18		0.0337
19		0.0385
20		0.0433
21		0.0240
<i>n</i>	104	104
MAF	0.0277	0.0302
<i>H</i>	0.8077	0.9038
PD	0.9429	0.9748
CE	0.6134	0.8033
PIC	0.8044	0.8863
<i>p</i>	0.7695	0.6780

n, sample size; MAF, minimum allele frequency; *H*, observed heterozygosity; PD, power of discrimination; CE, probability of paternity exclusion; PIC, polymorphic information content; *p*, Hardy–Weinberg equilibrium. χ^2 exact test based on 2,000 shufflings.

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