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FOR THE RECORD

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Population Genetics for Three STR Loci in the Population from Southern China

POPULATION: A total of 111 unrelated individuals from the Han ethnic group of Southern China (Nanning City, Guangxi, China).

KEYWORDS: forensic science, D3S1358, D8S1179, D5S818, short tandem repeats, Chinese population, DNA typing, population genetics

The loci studied were named as D3S1358, D8S1179, and D5S818. Samples were colleted from unrelated adults after informed consent. Genomic DNA was isolated utilizing Chelex method (1). Locus-specific primers of these STR were labeled with fluorescent dye. The volume of PCR reaction was 25 μL, and the amplified conditions were accordant with the protocol of manufacture. Amplification as carried out with a GeneAmp PCR system 9700 thermocycler (Applied Biosystems, Foster City, CA). The amplicons were analyzed on ABI PRISM 3100 Genetic Analyzer (Applied Biosystems, Foster City, CA).

Allelic frequencies, data of population genetics, and values of forensic science were calculated using software POWERSTATS (2). Allelic frequencies of these loci are listed in Table 1, and data of population genetics and forensic science are presented in Table 2. A total of seven alleles was observed at D3S1358, ten alleles were observed at D8S1179, and nine alleles were observed at D5S818 in the population studied. The conventional Chi-square analysis was used to detect significant departures from Hardy-Weinberg equilibrium expectations.

The complete dataset can be accessed via e-mail at: lovekoushui@sina.com.

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TABLE 1—*Distribution of allelic frequencies at three loci in the population studied.*

Allele	D3S1358 ($N = 222$)	D8S1179 ($N = 222$)	D5S818 ($N = 222$)
7			0.054
8		0.009	0.005
9		0.009	0.081
10		0.221	0.221
11		0.162	0.297
12		0.122	0.189
13	0.023	0.108	0.126
14	0.018	0.122	0.023
15	0.315	0.158	0.005
16	0.338	0.072	
17	0.216	0.018	
18	0.081		
19	0.009		

N: number of chromosomes.

TABLE 2—*Population genetics and forensic data of three loci in the population studied.*

Locus	D3S1358	D8S1179	D5S818
Power of Discrimination	0.882	0.955	0.929
PIC	0.69	0.84	0.77
Power of Exclusion	0.366	0.761	0.553
He	0.732	0.853	0.801
Ho	0.658	0.883	0.775
H-WE	$P > 0.05$	$P > 0.05$	$P > 0.05$

PIC: polymorphic information content; He: expected heterozygosity; Ho: observed heterozygosity; H-WE: test for Hardy-Weinberg equilibrium.

References

1. Walsh BS, Petzger DA, Higuchi R. Chelex-100 as medium for simple extraction of DNA for PCR-based typing form forensic material. Biotechniques 1991;10:506–10. [PubMed]
2. http//www.promega.com.

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