FOR THE RECORD

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Allele Frequency Distribution of STR D5S819 in Four Populations*

POPULATIONS: 112 unrelated healthy Chinese volunteer donors, 131 unrelated healthy Thai volunteer donors, 100 unrelated healthy Mongol volunteer donors, 117 unrelated healthy Germany volunteer donors

KEYWORDS: forensic science, D5S819, short tandem repeat (STR), Chinese, Thai, Mongol, Germany, DNA typing, population genetics

Blood Specimens mixed with EDTA were obtained from 112 unrelated healthy Chinese volunteer donors, 131 unrelated healthy Thai volunteer donors, 100 unrelated healthy Mongol volunteer donors and 117 unrelated healthy Germany volunteer donors, respectively.

DNA was extracted from blood specimens using Chelex-100 (1). Genotyping were carried out by PCR in a PE9600 cycler and silver staining. The components of a 20 μL reaction mixture were as follows: template DNA 20 ng, primer 0.2 μmol/L each, dNTPs 200 μmol/L each, KCl 50 μmol/L, Tris-HCl(pH8.3) 10 mmol/L, MgCl$_2$ 1.5 mmol/L, Taq polymerase 1U.

PCR conditions: start at 94°C for 5 min, followed by 32 cycles consist of 40 s at 94°C, 40 s at 55°C, 50 s at 72°C followed by a 5 min extention at 72°C. The amplified products were electrophoresed in 7% polyacrylamide gel by using 100 bp ladder and allelic markers as size markers, followed by silver staining (2). The amplified products were examined by an ABI PRISM^{TM} 310 Genetic Analyzer. Data were analyzed by The Promega Software, POWERSTATS.

D5S819 (3) locus is tetranucleotide. It exhibited 7 clearly distinguishable alleles ranging from 254 bp to 278 bp. The allele frequencies are shown in Table 1. The genotype frequencies are shown in Table 2. They are in good agreement with the HWE.

The complete dataset is available to any interested researcher upon request.

Additional information of primer:

> D5S819
> 5′-GTC ACC CAA AAG TCA TGA GG-3′
> 5′-TGT ACC CGC ATG CTA TAC AA-3′.

References

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2. Allen CR, Graves G, Budowle B. Polymerase chain reaction amplification products aeparated on rehydratable polyacrylamide gels and stained with silver. Biotechniques 1990;7:736–44.
3. http://lpgws.nci.nih.gov/cgi-bin/MarkerSearch?d5s819

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TABLE 1—*Allele frequency distributions of D5S819 in four populations.*

	Populations			
Allele	Chinese (n = 112)	Germany (n = 117)	Thai (n = 131)	Menggu (n = 100)
19	0.013	...	0.007	0.030
20	0.089	0.145	0.064	0.090
21	0.330	0.179	0.254	0.230
22	0.321	0.256	0.361	0.240
23	0.196	0.145	0.207	0.225
24	0.049	0.197	0.107	0.125
25	...	0.077	...	0.060
DP	0.895	0.934	0.920	0.938
Het	0.616	0.778	0.672	0.710
PE	0.311	0.558	0.386	0.444
PIC	0.690	0.790	0.750	0.780
HWE test*	0.369	0.607	0.212	0.274

*Probability values.
DP: power of discrimination.
Het: heterozygosity.
PE: power of exclusion.
PIC: polymorphism information content.

TABLE 2—*Genotype distributions of D5S819 in four population.*

	Populations			
Genotypes	Chinese (n = 112)	Germany (n = 117)	Thai (n = 131)	Menggu (n = 100)
19–19	...	...	...	...
19–20	...	...	...	...
19–21	2	...	...	1
19–22	...	...	1	...
19–23	1	...	1	2
19–24	...	...	...	1
19–25	...	...	...	2
20–20	2	4	4	3
20–21	6	5	7	4
20–22	4	8	7	4
20–23	5	4	3	2
20–24	1	5	5	2
20–25	...	4	...	...
21–21	17	4	13	8
21–22	18	8	16	10
21–23	10	8	16	9
21–24	4	10	7	4
21–25	...	3	...	2
22–22	17	10	9	8
22–23	12	7	13	9
22–24	4	16	8	6
22–25	...	1	...	3
23–23	7	4	12	7
23–24	2	4	4	7
23–25	...	3	...	2
24–24	...	3	5	2
24–25	...	5	...	1
25–25	...	1	...	1
Total	112	117	131	100