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Allele Frequencies of DYS19, DYS385, DYS388, DYS389 (I and II), DYS390, DYS391, DYS392, and DYS393 STR loci in a Korean Population

POPULATION: South Korean.

KEYWORDS: forensic science, Y-chromosome, short tandem repeat, population genetics, DYS19, DYS385, DYS388, DYS389 (I and II), DYS390, DYS391, DYS392, DYS393, South Korean population

TABLE 1—Allele frequencies and gene diversities of DYS19, DYS388, DYS389-I, DYS389-II, DYS390, DYS391, DYS392, and DYS393.

Allele	Frequencies							
	DYS19, <i>n</i> = 1161	DYS388, <i>n</i> = 1161	DYS389-I, <i>n</i> = 1161	DYS389-II, <i>n</i> = 1161	DYS390, <i>n</i> = 1161	DYS391, <i>n</i> = 1161	DYS392, <i>n</i> = 1161	DYS393, <i>n</i> = 1161
6	—	—	—	—	—	0.0017	—	—
7	—	—	—	—	—	—	—	—
8	—	—	—	—	—	0.0009	0.0009	—
9	—	—	—	—	—	0.0327	—	—
10	—	0.1008	—	—	—	0.8415	0.1869	—
11	—	0.0026	0.0086	—	—	0.1163	0.0835	0.0034
12	—	0.7011	0.3101	—	—	0.0060	0.5297	0.3566
13	0.0172	0.1783	0.2799	—	—	0.0009	0.1714	0.4496
14	0.1137	0.0112	0.3833	—	—	—	0.0224	0.1309
15	0.3919	0.0052	0.0181	—	—	—	0.0043	0.0568
16	0.3566	0.0009	—	—	—	—	0.0009	0.0026
17	0.1171	—	—	—	—	—	—	—
18	0.0026	—	—	—	—	—	—	—
19	0.0009	—	—	—	0.0009	—	—	—
20	—	—	—	—	—	—	—	—
21	—	—	—	—	0.0069	—	—	—
22	—	—	—	—	0.0939	—	—	—
23	—	—	—	—	0.4496	—	—	—
24	—	—	—	—	0.2946	—	—	—
25	—	—	—	0.0009	0.1266	—	—	—
26	—	—	—	0.0009	0.0250	—	—	—
27	—	—	—	0.0767	0.0026	—	—	—
28	—	—	—	0.2067	—	—	—	—
29	—	—	—	0.4358	—	—	—	—
30	—	—	—	0.2196	—	—	—	—
31	—	—	—	0.0534	—	—	—	—
32	—	—	—	0.0060	—	—	—	—
Gene diversity	0.6929	0.4667	0.6788	0.7109	0.6861	0.2775	0.6481	0.6509

A total of 1161 blood samples were collected from unrelated males of South Korean. DNA was extracted using the Chelex

method (1). The reaction was performed using 1–30 ng of genomic DNA in a 20 µL final reaction volume, and the PCR amplifications were carried out in a GeneAmp PCR system 9600 (Perkin-Elmer, Foster City, CA) using previously published temperature conditions (2). The PCR products were analyzed by 5% polyacrylamide denaturing gel (DYS385 by 7% polyacrylamide nondenaturing gel) electrophoresis and visualized by silver staining (3). Alleles were designated according to recommendation of the DNA commission

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TABLE 2—Allele frequencies and gene diversity of *DYS385*.

DYS385 (<i>n</i> = 1161)					
Allele	Frequency	Allele	Frequency	Allele	Frequency
10.9	0.0009	17.9	0.0009	20.9	0.0034
10.10	0.0095	17.10	0.0534	20.10	0.0362
11.10	0.0009	17.11	0.0267	20.11	0.0112
11.11	0.0155	17.12	0.0301	20.12	0.0095
12.10	0.0026	17.13	0.0146	20.13	0.0138
12.11	0.0164	17.14	0.0189	20.14	0.0146
12.12	0.0172	17.15	0.0034	20.15	0.0095
13.11	0.0121	17.17	0.0017	20.16	0.0052
13.12	0.0052	18.9	0.0086	20.17	0.0009
13.13	0.0189	18.10	0.1102	20.20	0.0009
14.11	0.0026	18.11	0.0189	21.9	0.0009
14.12	0.0095	18.12	0.0517	21.10	0.0112
14.13	0.0103	18.13	0.0319	21.11	0.0026
14.14	0.0060	18.14	0.0121	21.12	0.0017
15.10	0.0017	18.15	0.0069	21.13	0.0017
15.11	0.0009	19.8	0.0009	21.14	0.0086
15.12	0.0060	19.9	0.0086	21.15	0.0155
15.13	0.0026	19.10	0.1077	21.16	0.0017
15.14	0.0017	19.11	0.0310	21.17	0.0009
15.15	0.0009	19.12	0.0250	21.20	0.0009
16.9	0.0009	19.13	0.0448	22.10	0.0017
16.10	0.0060	19.14	0.0155	22.14	0.0017
16.11	0.0138	19.15	0.0069	22.15	0.0060
16.12	0.0172	19.16	0.0017	23.14	0.0009
16.13	0.0164	19.17	0.0009	23.15	0.0009
16.14	0.0017	19.18	0.0017	25.13	0.0009
16.16	0.0017	19.19	0.0034		
Gene diversity: 0.9586					

Tables 1 and 2 contain the summary of allele frequencies and gene diversities for the ten Y-STR loci, respectively.

The complete dataset can be obtained from the authors on request to: zhangyj@ybu.edu.cn.

References

- Walsh BS, Petzger DA, Higuchi R. Chelex-100 as medium for simple extraction of DNA for PCR-based typing from forensic material. *Biotechniques* 1991;10:506–10.
- Zhang YJ, Cui H, Cui Y, Lin HY, Kim KB, Lee JB. Y chromosomal STR haplotypes in the northeastern China Han population. *Forensic Sci Int* 2006;156:82–7.
- Bassam BJ, Gresshoff PM. Fast and sensitive silver of DNA in polyacrylamide gels. *Anal Biochem* 1991;196:80–3.
- Gill P, Brenner C, Brinkmann B, Budowle B, Carracedo A, Jobling MA, et al. DNA commission of the international society of forensic genetics: recommendations on forensic analysis using Y-chromosome STRs. *Int J Legal Med* 2001;114:305–9.
- Hou YP, Zhang J, Li YB, Wu J, Zhang S, Prinz M. Allele sequences of six new Y-STR loci and haplotypes in the Chinese Han population. *Forensic Sci Int* 2001;118:147–52.

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of the international society of forensic genetics (4). Statistical analysis was according to Hou's method (5).