

FOR THE RECORD

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Allele Frequency Profile of Three STR Loci in Nine North Indian Populations

POPULATION: Bhargavas ($n = 120$), Chaturvedis ($n = 120$), Brahmins ($n = 120$), Muslim Sunni ($n = 120$), Muslim Shiya ($n = 120$), Kayastha ($n = 120$), Mathurs ($n = 120$), Rastogies ($n = 120$), and Vaish ($n = 120$).

KEYWORDS: forensic science, DNA typing, population genetics, short tandem repeats, polymerase chain reaction, Uttar Pradesh, India, D5S818, D7S820, FGA

Whole blood obtained by venipuncture was collected in EDTA vacutainer tubes from individuals residing in different parts of Uttar Pradesh, India. The DNA was extracted by the phenol–chloroform method (1) and purified by ethanol precipitation. PCR amplification was performed for three autosomal STR loci, namely D5S818, D7S820, and FGA, using flanking primers (one of the primer for each loci was labeled with fluorescent dye Ned, VIC and 6-FAM, respectively) described by Perez-Lezaun et al. (2). The amplified products were separated by capillary electrophoresis on an ABI 310 (Applied Biosystems, USA) genetic fragment analyzer. Genotyping was performed with the help of 500-ROX-size standard using GeneScan v. 3.4 and Genotyper v. 1 software. The data were analyzed using Popgene (3) and Cervus (4) software. The allele frequency data are tabulated in Tables 1–3 for all nine populations.

TABLE 1—Allele frequency distribution of D5S818 in nine North Indian populations.

D5S818									
Bp	Bhar-gavas	Chatur-vedis	Brah-mins	Sunni	Shiya	Kayas-tha	Mathurs	Rasto-gies	Vaish
133	—	—	—	—	0.01	—	—	0.03	—
137	—	—	—	—	—	—	—	0.03	—
141	—	0.08	—	0.01	0.02	0.01	0.03	—	0.01
145	0.19	0.15	0.19	0.01	0.05	0.05	0.10	0.12	0.13
149	0.40	0.31	0.29	0.50	0.49	0.29	0.25	0.31	0.31
153	0.30	0.26	0.34	0.28	0.26	0.35	0.35	0.34	0.30
157	0.06	0.15	0.11	0.14	0.11	0.16	0.19	0.13	0.20
161	0.05	0.05	0.08	0.06	0.05	0.13	0.09	0.03	0.05
165	—	—	—	—	—	0.01	—	—	—
H_o	0.70	0.83	0.80	0.73	0.72	0.75	0.68	0.88	0.78
PIC	0.66	0.75	0.71	0.60	0.63	0.72	0.73	0.71	0.72
PE	0.29	0.40	0.34	0.24	0.27	0.36	0.37	0.36	0.35

H_o , observed heterozygosity; PIC, polymorphism information content; PE, power of exclusion.

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TABLE 2—Allele frequency distribution of D7S820 in nine North Indian populations.

D7S820									
Bp	Bhar-gavas	Chatur-vedis	Brah-mins	Sunni	Shiya	Kayastha	Mathurs	Rasto-gies	Vaish
194	—	—	—	0.01	0.01	—	—	—	—
202	0.01	0.03	0.01	—	—	—	0.01	—	—
206	0.20	0.08	0.14	0.11	0.11	0.11	0.09	0.15	0.09
210	0.13	0.15	0.10	0.10	0.11	0.13	0.18	0.22	0.16
214	0.16	0.24	0.20	0.14	0.15	0.21	0.19	0.10	0.28
218	0.26	0.25	0.21	0.26	0.27	0.26	0.29	0.17	0.23
222	0.19	0.24	0.25	0.30	0.29	0.18	0.15	0.25	0.23
226	0.05	0.03	0.09	0.06	0.04	0.10	0.10	0.13	0.03
230	—	—	—	0.01	0.01	0.01	—	—	—
H_o	0.80	0.75	0.70	0.73	0.72	0.83	0.78	0.80	0.73
PIC	0.79	0.76	0.79	0.77	0.76	0.79	0.79	0.79	0.76
PE	0.46	0.42	0.46	0.43	0.42	0.46	0.45	0.46	0.40

H_o , observed heterozygosity; PIC, polymorphism information content; PE, power of exclusion.

TABLE 3—Allele frequency distribution of FGA in nine North Indian populations.

FGA									
Bp	Bhar-gavas	Chatur-vedis	Brah-mins	Sunni	Shiya	Kayas-tha	Mathurs	Rasto-gies	Vaish
262	0.05	0.04	0.03	0.05	0.04	0.01	0.03	0.03	0.05
266	0.14	0.21	0.15	0.06	0.07	0.14	0.13	0.13	0.16
270	0.24	0.18	0.18	0.19	0.18	0.15	0.21	0.21	0.16
274	0.05	0.20	0.14	0.21	0.21	0.26	0.16	0.23	0.23
278	0.20	0.20	0.19	0.26	0.25	0.19	0.18	0.15	0.19
282	0.18	0.08	0.18	0.15	0.14	0.13	0.19	0.22	0.18
286	0.14	0.06	0.11	0.04	0.07	0.09	0.08	0.03	0.04
290	—	0.04	0.04	0.03	0.03	0.04	0.03	—	—
294	0.01	—	—	0.01	0.01	—	0.01	—	—
HWE									
H_o	0.85	0.68	0.80	0.88	0.88	0.85	0.88	0.80	0.85
PIC	0.81	0.81	0.83	0.80	0.81	0.81	0.82	0.79	0.80
PE	0.49	0.50	0.52	0.47	0.49	0.49	0.51	0.45	0.48

H_o , observed heterozygosity; PIC, polymorphism information content; PE, power of exclusion.

The complete data are available to any interested researcher upon request via email to the corresponding author at suraksha@sgpgi.ac.in

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